

PLEASE KEEP THIS MANUAL IN THE PRESSROOM

**MANUAL  
FOR THE OPERATION OF  
HEIDELBERG PLATENS**

**ORIGINAL HEIDELBERG**

**10 x 15" (25 x 38 cms.)**

**ORIGINAL HEIDELBERG**

**13 x 18" (34 x 46 cms.)**



**SCHNELLPRESSENFABRIK AG HEIDELBERG**

**SALES AND SERVICE THROUGHOUT THE WORLD**

Property of

MIDDLE BUCKS AREA VOCATIONAL-TECHNICAL SCHOOL  
Jamison, Pennsylvania 18929

No. \_\_\_\_\_

## PREFACE

This Manual is intended as an aid to pressmen who have not had previous experience with the Heidelberg. Normally, a trained erector instructs pressmen who will operate the machine upon installation. We recommend that pressmen who already know the Heidelberg also read this Manual in order to become thoroughly familiar with the operation of the

### ORIGINAL HEIDELBERG

We have intensified our efforts to aid job printers all over the world by simplifying operation and adding many time-saving features to our new model presses. More benefits than ever before are now derived through the many advantages offered only by

### ORIGINAL HEIDELBERG

The Heidelberg is truly an all-purpose press, able to handle easily sizes from a business card to maximum-sized sheet; from onion-skin to cardboard; from a simple one-color job to four-color process work. This reliable precision-manufactured machine handles a complete variety of jobs, feeding and delivering one, two or more pieces of stock simultaneously with a maximum speed and quality.

And now, may we make a few recommendations?

- 1) Please lubricate the Original Heidelberg in accordance with the instructions on the press and as prescribed in this Manual.
- 2) Clean the press regularly, especially after the spray gun has been used.
- 3) Please keep the air-holes in the right roller track and in the delivery blower clean and open at all times.

This takes but a few minutes each day, and will guarantee efficient performance for many years without the wear and tear caused by neglect.

We recommend that this Manual be kept with the machine, and that the Spare Parts book be filed in your office for ready reference.

Here is still another suggestion. Inks for platen presses should be of short consistency or should be suitably doped. Check with your ink supplier, too. All leading ink manufacturers have special inks for high-speed automatic platens.

We trust that this Manual will contribute to the continued good maintenance of the

### ORIGINAL HEIDELBERG

so that this highly efficient automatic platen will always bring maximum benefits to its owner.

**SCHNELLPRESSENFABRIK AG  
HEIDELBERG**

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## Table of Most Important Adjustments for Various Stocks

This table can only give the approximate adjustment. Maximum production speed on each run depends upon paper, size, and ink. The experienced printer will, therefore, make minor adjustments as the run proceeds until he has obtained the highest possible running speed.

Adjustments	Onion Skin	Medium-Weight Stock	Cardboard
Height of Feed Pile below suckers	Top sheet approx. $\frac{5}{8}$ " below sucker bar slide	Top sheet approx. $\frac{1}{4}$ " below suckers	Top sheet directly under suckers
Sucker Bar Tilt	Usually use plenty of tilt, but there is onion skin which can be run better without tilt	Tilt indicator in center position	No tilt. Indicator on "cardboard"
Feed Table Height Control	Paper feed indicator on or near "Thin Paper" setting	Indicator in center position	Indicator on or near "Cardboard" setting
Feed Table Adjustable Lift Control	Indicator on "Normal Paper"	Indicator on "Normal Paper"	In case lift is not sufficient, set indicator on "Cardboard" or "Heavy Cardboard"
Sheet Separation	Place pink slide on suckers. All separator springs as far out as possible	Red slide with small holes or yellow slide with larger holes can be used according to the weight of stock	Place rubber discs on suckers. Retract front separator springs a bit. Replace by side separator springs and extend more or less in and over the edge of pile
Feed Air Blast	Reduce air blast. Blower in top position	Medium to full air blast. Blower in top to middle position	Full air blast. Blower in lowest position
Delivery Air Blast	Reduce air blast more or less, depending upon paper size and printing speed	Medium to full air blast	Adjust as required
Automatic Stop	Turn thumb screw counterclockwise approx. all the way out	Thumb screw approx. in the middle	Turn thumb screw clockwise approx. all the way in

## Specifications for the ORIGINAL HEIDELBERG

	10" x 15"	13" x 18"
Largest Paper Size .....	10 $\frac{1}{4}$ " x 15"	13 $\frac{3}{8}$ " x 18 $\frac{1}{8}$ "
Smallest Paper Size .....	1 $\frac{1}{2}$ " x 2 $\frac{3}{4}$ "	3 $\frac{1}{2}$ " x 4"
Smallest Paper Size, Two-Up .....	1 $\frac{1}{2}$ " x 2 $\frac{3}{4}$ "	3 $\frac{1}{2}$ " x 4"
Maximum Width, Two-Up .....	5"	6 $\frac{5}{8}$ "
Inside Chase Measurement .....	10 $\frac{1}{4}$ " x 13 $\frac{3}{8}$ "	12 $\frac{5}{8}$ " x 17 $\frac{3}{4}$ "
Inside Measurement Skeleton Chase ....	10 $\frac{1}{4}$ " x 13 $\frac{3}{4}$ "	—
Maximum Speed .....	5000	4000
Power Requirements .....	1,5 H.P.	2 H.P.
Net Weight, Press without Motor .....	approx. 2,300 lbs	approx. 4,950 lbs
Gross Weight, Press without Motor ....	approx. 2,850 lbs	approx. 5,510 lbs
Length including Motor .....	5'3"	6'7"
Width .....	3'11"	4'9"
Height to Top of Spraying Apparatus....	6'5"	6'6"
Number of Form Rollers .....	2	3
Diameter of Rollers .....	2"	2"

## Drip Pan

Even when good care is taken to lubricate the press, it is inevitable that in due time oil will run down the sides of the machine and soil the floor. To prevent soiling and damage to the floor (especially concrete surfaces), it is advisable to place the press on a drip pan. The following sizes are recommended:

For the 10×15 Original Heidelberg ..... 3'2"×4'7"

For the 13×18 Original Heidelberg ..... 3'5"×5'11"

These drip pans can be secured from most local suppliers. See Page 15.

## Cleaning the Press

Whenever the spray gun has been used on a job, the press must be cleaned daily to remove any spray deposit. Take special care in removing this deposit from moving parts, and to keep oil holes and air-blast holes open. You should especially check the air-blast holes in the right roller track and in the traveling delivery blower.

The deposit from the spray gun is water-soluble and can be wiped off with a wet rag. Better yet, use soapy water to which borax has been added. After washing, rub thoroughly with a dry cloth, then wipe on a thin film of lubricant. This will keep machined parts from rusting.

When cleaning the oil holes, use some pointed object to insure that the oil always reaches the surface to be lubricated.

## Air Filter on the Pump

If the suction or air blast pressure on the Original Heidelberg decreases, it is a sign that the air pump filter needs cleaning. To prevent spray deposit from reaching inside the air pump through the intake valve, an air filter has been mounted on the pump cover. This filter should be taken off at least once a month, cleaned in warm water, and thoroughly dried before being replaced. Spray gun usage will govern the frequency with which this cleaning must be done. If the spray gun is used daily, we recommend that the air pump filter be cleaned at least once a week.



## Air Filter in the Suction Air Line

An air filter in the suction air line catches paper dust and prevents it from entering the air pump. This filter must be cleaned once a week. To remove for cleaning, simply unscrew the nozzle, as shown in the illustration. When running dusty or fluffy stocks, this filter should be cleaned more frequently.

A second air filter will be found in the cut-out body for tripping air suction. To clean, merely lift it out after turning the safety catch aside.





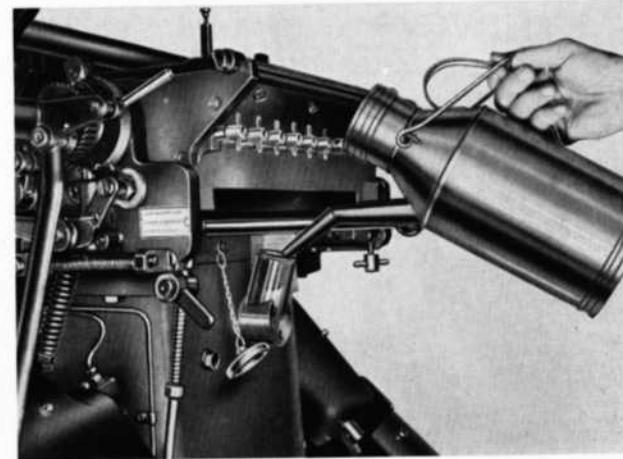
## Lubricating the Press

Careful and regular lubrication is of great importance for efficient performance and long life of a machine. Please pay special attention to the Instruction Plate on back of the side guard support. It reads in part as follows:

"For the central lubrication system as well as all other lubricating points, use only highest quality, high viscosity lubricating oil with about 10° to 12° E/50°C. Thin oils and greases are unsuitable and should not be used."

We recommend the following oils:

Shell Tonna B	— from Shell Oil Company
Eagle R & O Medium Heavy	— from Richfield Oil Corporation
Gargoyle Vactra Extra Heavy	— from Socony-Vacuum Oil Company
or equivalent oils from other approved companies.	



**Central Lubrication:** While the press is running, the red ball handle of the central lubrication system pump is to be pulled sharply in the direction of the arrow to its end position. This should be done every 4 to 8 hours depending upon the speed at which the press is run. (Note: A back pressure must be felt when operating the pump handle.)

**Daily Lubrication:** All lubrication points or oil cups marked red are to be lubricated with an oil can or oil gun.

**Weekly Lubrication:** All lubrication points and oil cups marked yellow are to be oiled once a week. Also refill oil reservoir of the central lubrication system weekly.

**Semi-Annual Lubrication:** Oil the ball-bearing points marked green with a few shots from the oil can or oil gun.

It is recommended that the press motor be inspected and lubricated twice yearly by an electrician.

**Cleaning and Oiling Go Hand in Hand.** Due to the spray deposit when working with the spray gun, the lubrication points must be cleaned carefully before oiling. Remember too, that the air filter on the air pump and the two filters in the feeder suction airline must be cleaned weekly, otherwise the suction will be impaired.



Upon installation of a new press, the central lubrication lever is pumped from 10 to 20 times at short intermissions until no air remains in the system. Thus, the oil containers above the toggle lever bearing (which can be seen by opening the door at back of press) are completely filled with oil. This liberal lubrication of the toggles at the outset is very important. (This is done by the Installation Man.)

During the first three months of operation, the central lubrication lever should be operated every 3 to 4 hours so that all important moving parts which are centrally lubricated can be well run in. The oil is forced to these points under a pressure of 284 pounds.

The central lubrication system supplies oil to 15 most important bearings on the 10×15 Original Heidelberg, and 18 on the 13×18 Original Heidelberg.

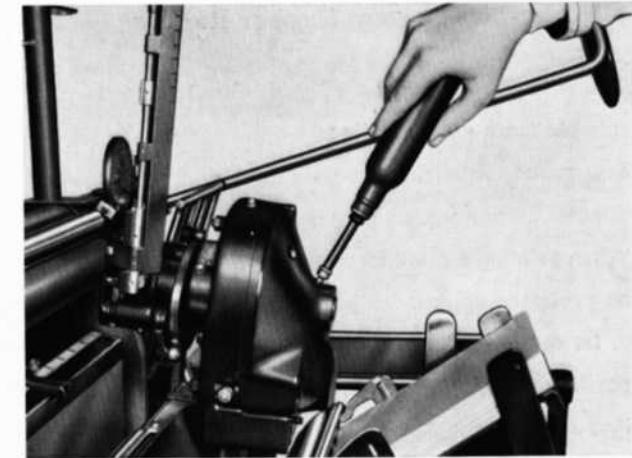
The oil reservoir for the central lubrication system must be refilled weekly to prevent the oil level from falling below the yellow mark on the inlet pipe. When refilling the reservoir, the oil passes through a screen to keep out foreign particles which might clog up the lines and prevent the central lubrication system from functioning properly.

Lubrication points not connected to the central system must be oiled individually. It should be remembered that oil pressure nipples must be lubricated with an oil gun, while the open oil holes are lubricated with an oil can.

Oil pressure nipples and oil holes marked RED are lubricated daily. All oil holes and nipples marked YELLOW are lubricated weekly, and it is suggested this be done at the beginning of the week.

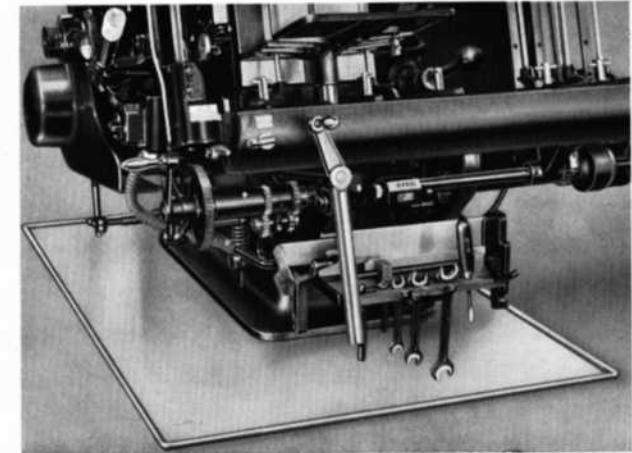
The bearing points marked GREEN must be lubricated every 6 months with a few shots from the oil can. These are all ball bearings and a very small amount of oil is sufficient.

The ball bearings on the form roller journals should be packed with grease. Do not over-lubricate or the excess will get onto the roller tracks which must always be kept absolutely clean.



To lubricate points equipped with pressure nipples, fill the oil gun with one of several recommended oils, the same as is used in central lubrication system, mentioned previously. In no case should grease be used in these nipples, with the exception of variable speed pulley. To lubricate, place the oil gun on the nipple and press down firmly.

For lubrication of the variable speed drive pulley a grease gun is provided. The pulley should be cleaned and lubricated with the recommended grease every 30 days of operation. At the same time all gears in the machine should be lubricated with grease.



We recommend the use of a drip pan as illustrated. This will catch all oil running down the sides of the press and prevent floor from being soiled. Dimensions of drip pans are listed on Page 10.

## Hints on the Care of Rubber Rollers

The rubber rollers supplied with the Original Heidelberg are soft, resilient and suitable for quality printing at good speeds. To get the best possible results from new rubber rollers, it is advisable to run them in light lubricating oil for 30 to 45 minutes before any printing is done.

When printing a small form, those portions of the rollers which are not inked should be protected against friction with a few drops of oil. In some cases it is advisable to let out a small supply of ink over the entire roller surfaces. This prevents the possibility of the oil mixing with and reducing strength of the ink.

If you print large heavy solids when the rollers are new, it may be necessary to run up the ink for some time before actual printing is started.

Rubber rollers distribute ink quickly. However, on lengthy jobs requiring strong colors, it may be advisable to carry more ink during the first few hours.

In washing rollers, use only those cleaning solvents recommended by your dealer. For Heidelberg's Washup Device, a 50—50 solution of kerosene and gasoline gives very good results. By all means, use so-called "ink eradicators" with caution. Many of them are highly volatile and can impair the roller covering.

In judging the condition of a rubber roller, its tack is an essential point to consider. As long as rollers retain their velvet-like surface, they are suitable for inking even the heaviest forms.

If the surface is glazed and hard, as caused by inks or varnishes having dried on the roller, soak them overnight in a 5% lye solution, or apply a recommended regeneration paste to the surface and let them set overnight. This paste dissolves the crust without affecting the rollers in any way. The next morning they can be cleaned off with a moistened rag. Either of these treatments will give you better and longer roller service.

If regrinding is necessary, send your rollers to a qualified roller firm. When reground, the diameter of the rollers will be about .020 to .040 inches smaller. This will not affect printing quality if the roller settings are correct. Rollers can also be reground if their surface has been damaged. However, check the depth of the cuts or nicks.

Whenever the press stands idle for a length of time, it is important to disengage the rollers. Upon completing a day's work, ink should be removed by means of the Washup device. As long as the ink has not dried, this is an effortless chore. Heidelberg's unique built-in washup cleans rollers and the form in a matter of seconds. Owners and pressmen appreciate this for it means a clear saving in time and money.

## Printing of Mixed Forms (halftones and type matter)

On mixed forms, a thin rubber blanket is used for the halftone areas, and a sheet of ivory-finished cardboard (similar to sample at end of this Manual) for the type areas. Both rubber blanket and cardboard are pasted over the makeready on the manila tight sheet under the top sheet. Make sure that the thickness of overall packing is the prescribed  $1/25$ ".

Pull an impression on the tight sheet which has been pasted to the bottom edge of the platen and secured by the tympan rods at bottom and top. This will give you the exact position for makeready. For leveling of the form on the tight sheet use only thin tissue or folio. This is then followed by a hand cut overlay, a mechanical chalk overlay makeready, or a Primaton makeready. Detailed explanations about these makeready systems are found on Page 24—26.

The makeready which has been pointed at all four corners before etching, or has been provided with small pointed cuts, is then pasted on the tight sheet. Temporarily, a cover sheet is stretched across this makeready. As the packing becomes thicker from spotting and addition of cover sheet, several of the fill-in sheets must be removed from the packing. The cut-out pieces of rubber blanket and the ivory finished cardboard are then placed upon the makeready so that they are below the temporary top sheet.

The pressman now pulls an impression to determine if further makeready is required. Use tissue or folio behind the form if the printed sheet shows uneven areas caused by old type. If any areas still lack good impression, correct them by using tissue paper on the tight sheet underneath the rubber blanket.

When makeready is complete and the entire form (halftone and type matter) prints evenly, remove the temporary cover sheet and replace it with a tympan sheet. The tympan should be clamped at all four sides and must remain absolutely smooth.

Use of a good tympan is important. Always keep on hand a supply of precut tympan sheets prescribed for the Original Heidelberg. Your dealer can always advise you where to procure these if your own paper supplier does not carry them.

For long runs, it is advisable to slightly moisten the top sheet on both sides with a sponge before placing and clamping it on the platen. As it begins to dry, it shrinks and becomes taut. It will remain smooth and tight for several days' running. Always remember that a creased or wrinkled tympan can cause poor register, and that loose packing may cause slurring.

### Printing Halftones on Original Heidelberg

There is a difference between printing on a cylinder press and platen press. The distinction is in the method of impression; however, the variation of quality in printing halftones is not as great as printers might suspect. Excellent halftones can be printed on a platen if the prime factors of makeready, paper and ink are taken into careful consideration.

First, the cut must be brought to exact type height. Large plates should be mounted on a metal base with the use of good adhesives available today. Such mountings can also be stripped easily by heating over a gas flame or on an electric heater.

Follow the instructions given under "Printing of Mixed Forms (halftones and type matter)".



If the form contains large halftones a spot sheet should be made before preparing the makeready. To do this, pull an impression on a sheet of book paper. This sheet is then placed (printed side up) on a sheet of carbon paper. The areas to be made ready are then marked out. If there are any unusually large or solid areas, it will be necessary to spot them with two or three layers of tissue. If the cut in this case is wood mounted, it is recommended that you use a 2 to 3 ply underlay or interlayer. This will better counteract a wood mounted plate's tendency to yield. The packing should be reduced to the prescribed  $1/25$  of an inch by removing some of the press-board or book paper.

For good halftone work, use only quality inks recommended for this type of work. Check to see that they are suitable for the stock you are running. Good halftones cannot be produced by using job printing inks. To obtain good results on platen presses, the inks must be stiffer and more fullbodied than those required by cylinder printing.



When ordering inks, specify that they will be used for platen printing. You are then sure that the ink will be of good quality and the right consistency. Platen ink is rich in pigment and stiff. It will flow smoothly, and when taken up on the ink knife, it will break off short.

Remember too, that roller settings must be checked with a type-high gauge. If the roller tracks are adjusted too low, slurring will result and the screen of a halftone will fill in.

Top grade rubber rollers should be used when printing halftones. It is important that they be cast to the correct diameter prescribed for the Heidelberg.



Better inking on large solids can be obtained through use of rider rollers. One is available for the 10 x 15 Original Heidelberg while two can be used on the 13 x 18 Original Heidelberg. Always make certain that the roller tracks and roller trucks are free of grease or oil. Powdered rosin dusted on the roller tracks will insure good friction.

Observing these few simple hints will result in much better production of solids. Thousands of printshops all over the world will attest to the Original Heidelberg's efficiency in this type of work.



### Printing Solids on Original Heidelberg's

When printing solids on platens, remember that printing is effected over the whole area and therefore, the printed sheet has to be taken off the form in one movement. In cylinder printing, the sheet is rolled over the form by the cylinder and only a portion of the cylinder contacts the form at any one time. Hence, the reason why platen inks differ from cylinder inks. Inks for platen printing must always be as heavy bodied as possible.



If the paper tends to pick, it is necessary to dope the ink to suit the stock. In this case, the ink is made softer by using reducers. However, if reducing is excessive, there is a possibility of the ink becoming greasy and rubbing off even months after printing. To avoid this trouble and give a more solid consistency to the ink, add a small quantity of cornstarch. This will keep the ink short and prevent the paper from sticking to the form. Whenever driers are necessary, they should be added in proportions recommended by the ink manufacturer.

If ink cannot be used directly from the can, the added printing aids should be mixed in thoroughly. The best way to do this is on stone or glass. Another big factor in producing good solids is the correct composition of the packing. For this we recommend use of a rubber blanket. Place it between the top sheet and the spot sheet, making certain that it covers the entire area of the solid.

In letterpress printing, the form inking of platen presses depends upon the "circumference-unrolling of ink" from the form rollers on to the plates. When the size of the cuts or plates exceeds the circumference of the form rollers, a "ghost mark" tends to appear, particularly when certain color tones are printed.

To minimize ghosting, insert rider roller(s) and use inks with a greater density. Another important factor is the correct setting of the form rollers.

Ghosting will usually occur when using certain color tones on solids with cut-outs. In such cases, the use of rubber rollers is preferable as they carry more ink and distribute it more uniformly.

When ordering ink for such jobs, the ink company should be advised that it is for a solid. Such an ink is rich in pigment and has not been stretched or cut with transparent white or other printing aids.

## Printing of Process Jobs on Original Heidelberg Platen Presses

The requisites for good process color work on Heidelbergs are the same as those required for other presses; namely, suitable stock and printing aids in the hands of a skilled pressman who has a knowledge of makeready and the ability to match inks.

The packing is the same as in halftone work. The manila tight sheet for makeready is pasted on the bottom edge of the platen. Dependent upon their weight, insert from 7 to 9 fill-in sheets between the tight sheet and the platen. (See sample of fill-in sheets at the back of this Manual.) Place a rubber blanket on top of the tight sheet. When large printing areas are involved, we suggest that 3 of the fill-in sheets be replaced by 1 sheet of blotting paper. This is best placed over the bare platen. Make sure that the correct packing thickness of  $1/25$ " is maintained.

Use metal mounted plates for best results in process color work.

Use a hand cut or mechanical overlay (chalk relief overlay or Primaton) for makeready. Any area that does not print evenly after the overlay has been placed, level up with thin tissue. When the pressman finds that the form prints clean, a rubber blanket is placed over the makeready. The tympan sheet is then put on and clamped in on all four sides of the platen. For long runs, it is advisable to slightly moisten the top sheet on both sides with a sponge before placing it on the press. As it begins to dry, it shrinks and becomes taut. It will remain smooth and tight for several days' running.

From our long experience in producing process color jobs, we have found that the most frequent sequence of colors should be blue-yellow-red-black. Quite often the sequence of black-yellow-red-blue will produce good results. When printing blue as the first color, an even tone will be obtained throughout the entire run, whereas difficulties may be encountered when yellow is printed first. Since highly transparent yellow is now available, it can be worked as the second color without affecting the first. The sequence of printing black-yellow-red-blue is normally used when the black form gives the position, and it is not necessary to emphasize the black on the print. When working without progressives, the best sequence is black-yellow-red-blue. By doing so, the pressman can use the blue to correct any color discrepancies which may occur when working the first three colors.

## Driers

Driers should be used carefully. Cobalt driers should never be added to the first colors down of an overprint job. Only a paste drier should be used. The paste drier will keep the first colors open, otherwise the following colors may not trap.

Care should be taken that the printed sheets do not stick together. Small lifts of 500 to 600 sheets should be lifted from the delivery table. Place a piece of cardboard on the delivery table for easy removal. In this way, the sheets are kept perfectly flat and the possibility of off-set is reduced. Another important point to consider is the adjustment of anti-offset spray for various colors. For the first color, use only a very fine spray to prevent the paper surface from becoming rough. If too much spray is used on the first color, difficulty may be encountered in trapping the following colors.

## A few Hints on Running Thin Stock

Thin stock generally is more difficult to run, so special care should be taken in adjusting the press when running this type of stock. These are the most important adjustments to check:

### a) for the feed

The correct height adjustment of the blower for sheet separation on the feed pile. Adjustment of the separating springs as far as possible into the pile.

Adjustment of the side separator springs so that they extend  $1/8$ " over the edge of the pile.

Cut back air blast in the feed for sheet separation so that the top sheets are well separated, but still not blown away from the front standard.

Place one of the sheet slowdown fingers (see Page 64) on rear edge of pile.

For thin papers, 9, 11, 13 lb., use either the pink or red sucker bar slide. For very light stock less than 9 lb., use the metal inlaid pink sucker slide and pull out thin stock button. See Page 73. For further hints on running thin stock, see Pages 73 and 74.

### b) for delivery

Air-blast of delivery is adjusted as needed. Generally it should be decreased for thin stock.

If air blast for feed and delivery is too strong, it is advisable to open the release valve on the air pump slightly and let air escape.

For smoother feed and delivery the stock should be cut and fed with the grain running the long way of the sheet.

If printing light stock to the guides, the pressman can make his work easier by placing the guide spring next to the left-hand guide.



## Mechanical Makeready Systems

In all of our worldwide contacts, we believe that the following mechanical makeready systems are the best devised and most widely used:

### Mechanical Chalk Overlay

Just as hand-cut overlays are based on the rule that solids require more impression than highlights, the mechanical chalk overlay follows on the same principle. The standard of quality in printing half-tones has improved considerably the past fifty years, and the demand for longer runs has also increased. Mechanical overlays should therefore be able to withstand long run wear because true and crisp reproduction of all tone values is a basic requisite. The ultimate objective of good engravers is true and correct reproduction of all tone values through use of improved methods. The printer, of course, should support these efforts by using up-to-date makeready methods.

The mechanical chalk overlay is one of the systems especially suited for good reproduction, and its application is quite simple. This brief description and four photographs illustrate its use. Of prime importance for a faultless makeready is to see that the cut prints evenly. After this is insured, pull two impressions in succession with hairline register... using the special ink for this process. This ink should be used out of the can and without addition of any oils, varnishes or reducers.

After pulling the impressions, rub a little French chalk or talcum powder over the print. Before placing the foil into the etching solution, cut-outs are made at the corners or other striking points with a width of about 9 points. This is done to obtain position points for pasting up the mechanical makeready. Next prepare the solution with etching powder. Following the instructions on the container, dissolve about 5 drams of powder in 2 pints of water having a temperature between 59 and 65 degrees Fahrenheit. Cold water will hamper the etching process, so if necessary, heat the water first.

While immersing the overlay in the etching solution, care should be taken that both sides are immediately covered by the solution and that the foil is constantly kept in motion. Now and then pick up the foil by the margin and turn it over.

Test progress of etching by removing it from the bath. If the reddish layer can be rubbed off the margin between two fingers to show the white surface of lower base sheet, then the etching process is completed. Now, using a cotton swab, rub lightly over the foil. The foil is correctly etched if the highlights show the white of the base sheet, the medium tones appear in a reddish hue and the solids still remain covered by the black etching ink.

The overlay foil should then be thoroughly rinsed and pressed between blotting paper. Talcum powder should then be rubbed over the dry foil. When made properly, the overlays can be used repeatedly.

### The Primaton Makeready Process

The Primaton makeready is a thermoplastic method of makeready. It results in a graduated overlay surface (dependent upon line screen of the cut) to eliminate ink fill-ins and mottling in subtle halftones. Primaton makeready plastic powders cover four grades and the relief of this makeready depends chiefly upon the grade of powder used. Always use Grade I for Original Heidelberg. The tack of the powder depends upon the amount of ink used. The more ink, the better the microscopic Primaton powder granules, and the more compact these granules are, the more pressure they will create. The density of the powder is therefore the determining factor for bringing out the various tone graduations within the cut. Preparing a Primaton overlay is simple. It is important that the cut prints evenly. In most cases, a standard ink may be used if a few drops of special blending agent (Fiegol) are applied to the form rollers. If a standard ink proves to be unsatisfactory, a special ink can be procured. The Primaton makeready ink has certain constringent properties. If 3 or 4 minutes are allowed to elapse between the inking of the form and



the actual impression, crisper tone values can be obtained.

Make cut-outs at the corners or other striking areas of the sheet about 9 points wide, so that the mechanical makeready can be pasted on in correct position. However, nothing should be cut away from the sheet. After being placed in a flat tray, pour Primaton powder Grade I over the print. Use a broad soft brush to work the powder back and forth over the sheet surface until the powder dissolves in the highlights. After this is done, the sheet is then treated in a second tray with blue powder Grade 0.

This blue powder serves to fill and develop the most delicate tones. Minor corrections can be made with a small camel-hair brush, makeready knife, and a wad of cotton. Next, clean off all powder that may be on the back side. The overlay is then heat-treated by holding and slowly moving it back and forth over a heater at a constant temperature between 260 and 330 degrees Fahrenheit.

When the white hue of the powder has completely disappeared and the overlay shows a dull finish over the entire surface, it is then ready to be used.

## Slurs in Platen Press Printing

The pressman should thoroughly understand that there is a difference in slurs caused by too thin an ink, slurs caused by form rollers, and slurs caused because the ink is too tacky.

### Slur caused when Ink is too thin

A thin-bodied ink can cause slurring on type matter, halftones and ruled forms. Close examination will show filling-in of the type face and the spaces between the screen dots in the halftone.

This can easily be detected in a halftone as the spaces between the dots are comparatively small and fill in more easily. When the ink is thin-bodied or there is insufficient impression, many pressmen tend to use too much ink in attempting to get the desired coverage.

A slur is not so prominent on a deeply etched halftone because the dots are more pointed than those on a cut not etched as deeply. You'll find that this kind of slur appears more often on smooth stock than work a slur caused by thin-bodied ink can even make the spaces between the dots darker in tone than the dots themselves.

on paper with a rough surface. In color work a slur caused by thin-bodied ink can even make the spaces between the dots darker in tone than the dots themselves.

When this slur first appears, it can be detected as small hairlines on the cut.

### Slur caused by Form Rollers

A slur caused by inferior or incorrectly set form rollers can appear anywhere on the printed sheet. When using rubber rollers, this slur may be caused by the deposit of varnish-like fragments from the roller's surface. This glazed crust-like coating results from using ink driers. It is therefore important to clean the rollers regularly as prescribed previously in this Manual.

If the rollers are not even or perfectly round, a slur will also result wherever the uneven part contacts the form. Always check the roller setting.

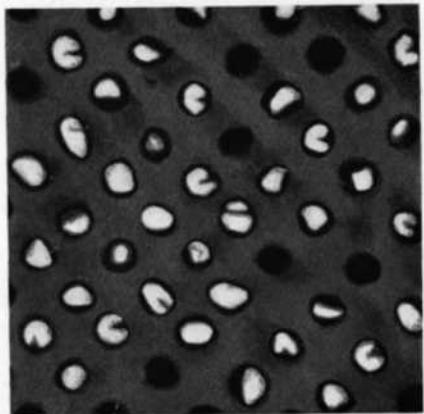
Remember too, that roller trucks and roller tracks should always be free from grease and oil. Keeping these dry will prevent the rollers from skidding.

### Slur caused when Ink is too tacky

In platen press printing, a rather serious slur will result when the paper sticks to the form after printing and as it is pulled away by the gripper. The sheet is pulled sideways, causing the dots of a screen or the type face to be blurred. This comes from using an ink that is too tacky.

The remedy is to reduce the ink, if possible, by mixing it with an ink of the same color, but of thinner consistency. For example, a bond ink could be reduced with a job or half-tone ink.

The printed sheet should always leave the form easily. The air-blast from the right hand roller track on Heidelbergs helps this considerably. The air from these holes helps to peel the sheet away from the form and keeps it smooth when it is swinging out. From time to time, these blow holes should be cleaned so that they remain open and serve their purpose.



## Slur on Type Matter and Ruled Forms

This type of slur is usually described as a "trapped air" slur. It is caused by air which cannot easily escape from between the sheet and form when the platen closes. Compression forces the air out between the border and the paper, thereby producing a slur. One remedy is to lock up the form with hollow furniture. In some cases, pressmen will often remedy this by removing the borders from the form and drilling holes through them just below the printing surface.

When printing type matter and ruled forms, it is necessary to have a good hard packing and a tight tympan sheet. Bond inks are preferable on this type of work. Reduce the ink flow to a minimum. The use of friskets will also help to correct slurs. Curled stock can cause a slur on the tail end of a sheet. In most cases this can be overcome by using friskets.

## Die-Cutting on Original Heidelbergs

The speedy Original Heidelbergs have a good advantage over die-cutting platens. The fact that it takes so little time to make a Heidelberg ready means more profit per job.



Die-cutting on our presses requires the following simple steps:

- 1) Remove form rollers from the machine.
- 2) Remove packing and place a die-cutting plate on the platen.
- 3) Make tiny nicks in the cutting rules so the die-cut sheet can be delivered, and later stripped by hand.
- 4) Glue sponge rubber on the die-base so the stock does not adhere to the cutting rules.

Die-cutting on the Original Heidelberg is just as easy as printing an ordinary job. Die-cutting rules for simple die-cutting jobs can be secured from your local supplier. However, your more complicated dies should be made to order. When ordering rules or dies, specify that material must be type high (.918).

Before ordering such a die, check to see if you can die-cut in multiples, especially on long runs.

Your die-cutting plate, especially designed for the Heidelberg, is merely snapped onto the platen. The plate, with its lugs, rests against the top and bottom edges of the platen. At the top of the plate, you'll find a small screw which is tightened to secure the plate.

Makeready, if required, is pasted under the die-cutting plate.

If your die contains creasing as well as cutting rules, paste a sheet of tympan on the cutting plate so that the creasing rules can be made ready. To locate them, dab a little ink on the creasing rules and then pull an impression. On both sides of the creasing rules, cardboard strips, approximately  $\frac{1}{4}$ " wide, are pasted on the die-cutting plate. The space between the strips depends upon the thickness of the stock to be creased.

If you are interested in securing more detailed information on die-cutting, write to your Heidelberg dealer for a special pamphlet on this topic.

## Embossing on 10 x 15 and 13 x 18 Original Heidelbergs

This versatile platen press can also be used to good advantage for embossing.

Embossing requires a female die. This is a metal plate into which the picture, image or text to be embossed has been engraved in intaglio. The die is usually made of brass,  $\frac{3}{16}$ " or  $\frac{1}{4}$ " in thickness. The die is brought to type height by means of a metal mounting. Always check the die to be sure it is exactly type high.



Next, the male embossing die is prepared. This has the same contours as the female die, which must fit into the engraved portion of the female die. To obtain the best results, the male die must include all the details engraved into the female die. The first step in preparing a male die is to clean all oil and grease film from the platen. (Most shops use a cleaning solvent; however, one of our favorite tricks is to rub the platen with an onion.) Next, paste a sheet of mat board a little larger in size than the female die, on the platen. Before pasting the counter, moisten it slightly with a sponge to make sure that it adheres securely. After the counter has thoroughly dried, insert the locked-up female die in the press. The female die should now be inked a little in order to pull an impression on the counter. Since the counter does not have the required packing thickness, it will be necessary to place a few sheets behind the female die in the chase in order to make an impression on the counter. Now pull an impression so that an image of the female die appears on the mat board which was pasted to the platen. This is necessary for preparation and exact positioning of the male die. Having done this, remove the sheet from behind the female die.



it. The intaglio portions of the female die, which do not print on the blotter, must be cut out. Cut these very accurately and paste them in their corresponding positions on the image which appears on the mat board. This serves the purpose of building up the male die. Use a good adherent paste or glue when pasting these blotter cut-outs.

Now take out the form rollers and wash the form. Start the machine, using light impression at first, then increasing it until the male die is completely formed.

If the details of the male die are not sharp enough, paste an additional blotter cut-out on top of it. To prevent the edges of the female die from marking the stock, make the second blotter cut-outs smaller than the actual size of the female die, but large enough to cover all intaglio parts. Make one more impression (at full

impressional strength) so the intaglio parts press sufficiently into the female die.

If there are still areas which do not emboss satisfactorily, spot them with tissue paper.

The second method of embossing requires more time and is usually necessary in such cases where the male die contains many fine details which cannot be cut out of blotting paper.

First, mix two parts of Plaster of Paris with three parts calcium carbonate. Add enough arabic gum to make mixture a doughy paste. Spread it evenly on the pressboard which is pasted to the platen. Wipe off the female die with a thin oil to prevent the compound from sticking to it. (You can also stick a piece of tissue paper to the female die with a drop of oil for the same purpose.) Now turn the press over once by hand with light impression. This will cause the embossing compound to be pressed into the recesses of the female die. Now trim off the edges of the male die, that is, cut off the surplus compound squeezed out during the impression. Gradually increase impression during the hardening process of the compound. As soon as it is sufficiently hardened, impressional strength should not be increased any more.

Next, permit the embossing compound to dry until it can just be cut with a make-ready knife. Trim excess compound away from the edges.

Finally, the male die is lightly powdered with talcum. It is best to make the male die late in the afternoon, so that it can be left to dry thoroughly overnight. This will then give you a male embossing die good enough to run thousands of impressions without losing sharpness.

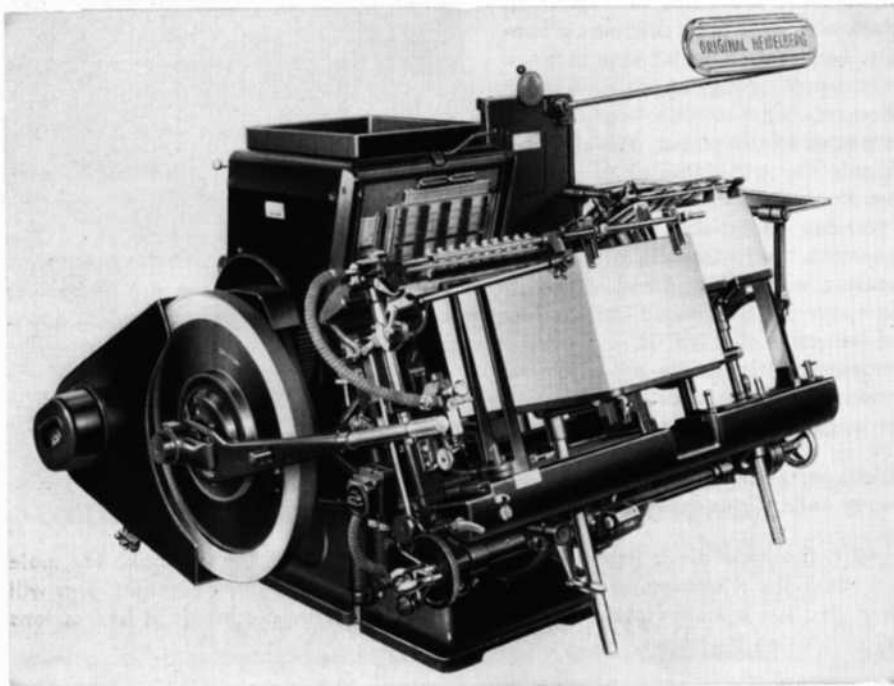
A few final hints. Choose a stock that is suitable for embossing. When you produce large embossings, do not use excessive impression. A medium impression is preferable, but if it appears insufficient, place an underlay of not more than 3 sheets of bond paper behind the female die.

We have a special pamphlet available on embossing. If you are interested in having a copy, simply write to your Heidelberg dealer.



## Original Heidelberg Platen Cutter and Creaser 13 x 18"

To meet the steadily growing demand from paper converting and carton firms for Original Heidelbergs for steel rule die-cutting, a special cutter and creaser has been developed. This machine is supplied without printing facilities; that is, inking mechanism, rollers, or spray equipment. Impressional strength has been increased by reinforcement of the main base and platen. Equipment of the Original Heidelberg Platen Cutter and Creaser comprises either a 3.0 mm (.120") hardened and ground steel die-cutting plate for .918" height cutting rule, or a 2.5 mm (.100") plate for .937" height rule. The platen has been ground accordingly, and the die-cutting plates are secured to the platen surface with screws. A steel makeready plate 0.8 mm (.032") in thickness is provided. All makeready is done on this plate behind the form, and guide pins guarantee absolute positioning of the makeready plate in relation to the chase and form.



For embossing jobs on the Original Heidelberg Platen Cutter und Creaser, a steel plate 2.0 mm (.080") in thickness is supplied, which is also secured to the platen surface with screws. When using the 2.0 mm embossing plate, there is a clearance of 1.0 mm between the plate surface on the platen and the embossing die, which provides the normal required clearance for the male or counter embossing die.

The die-cutting and embossing plates can be supplied with either three or four mounting screw holes. Plates with three holes are used when the die-cutting or embossing form extends to the extreme lower right-hand corner of the platen. On repeat jobs which involve a considerable amount of creasing rule makeready or intricate male embossing dies, it is often recommended and advisable to have several die-cutting or embossing plates. At the completion of a run, they can be stored and used again when the job is repeated, thus resulting in a considerable saving of time.

### Die-Cutting Hints:

Preparatory to starting a die-cutting job, it is important that the height of the steel rule contained in the particular cutting die be determined. The height of the rule, either .918" or .937", determines the thickness of the die-cutting plate to be used on the platen. The 3.0 mm plate for .918" height rules and the 2.5 mm plate for .937" height rules. Removal and replacement of the die-cutting plates and the embossing plates is quite simple. Simply remove the three or four screws, exchange the plates and then replace the screws.

Each die-cutting job should be started with minimum impression and then increased as required. Excessive impression shortens the life of the cutting die. The 0.8 mm (.032") makeready plate which also protects the surface of the base, is placed behind the die-cutting form. To obtain makeready position, insert a sheet of manila, the size of the makeready plate and sheet of carbon paper between the die-cutting form and the makeready plate, with carbon side facing the manila sheet.

Run several sheets through the machine on impression, which will clearly indicate on the manila sheet where makeready is required. After initial makeready has been made on the manila sheet, it is then placed behind the makeready plate; that is, between the plate and the base. Since the manila sheet is the same size as the makeready plate when placed behind the plate, it will be exactly in the same relative position as before. Otherwise, the makeready for the creasing rules is made on the surface of the die-cutting plate, as described on Page 29. The adhesive or paste used should be of good quality and retain some degree of elasticity after drying. Hard, brittle pastes are unsuitable, and could allow the creasing rule makeready to chip off during the run. The Original Heidelberg Platen Cutter and Creaser is equipped with an additional safety device which makes it impossible to start the machine until the chase is properly locked in position.

## Carbon Printing on 10 x 15 and 13 x 18 Original Heidelbergs

For carbon printing, we have designed an ink fountain heating device to enable shops to produce carbon prints on Original Heidelbergs.

The pressman undertaking this work has to consider various factors to get the best results.

The most important factor is the ink used. Carbon printing inks are mixed with wax and can only be used if the stiff ink in the fountain is heated before distribution.

Printing aids which are usually added to regular inks should not be used in carbon inks. The ink should always be used straight from the can. If it is absolutely necessary to dilute this ink, use only a special carbon paste.

It is always important to print with a consistent ink quantity. Carbon inks will not harden in the fountain and will flow easily because they are heated. When ordering carbon inks, specify that they are for the Heidelberg and that an ink heating device is available. The ink company will then prepare an ink of stiffer consistency which will, of course, improve the copying qualities of the carbon. The quantity of ink used in carbon printing should be much more than the amount used in ordinary work.

Off-set is avoided by keeping the delivered sheets in small lifts.



Any material that will take ink is suitable for use as a printing plate. Copper or zinc cuts, smoothly surfaced wood cuts type-high, synthetic plates and rubber plates (if resistant to fat and oil) can be utilized. The packing should be soft and resilient. Adjust impressional strength as light as possible to prevent the ink from squashing, and to make certain that the ink film being applied is not too thin.

Makeready should be prepared carefully and accurately to insure that the ink film application is even. Use a rubber blanket under the top sheet, and we recommend that you also insert a few packing sheets . . . especially when printing from metal plates.

The rollers should be in top condition. Form roller settings must be accurate so that the form is inked evenly. This also prevents squashed edges. If you produce carbon print jobs repeatedly, it is recommended that you have an extra set of rollers available.

Select your stock with care. The harder the paper, the better and more durable the copying qualities will be. The best paper to use is one with a smooth as well as a hard surface. Good drawing and typing papers without rag content are suitable. Cellulose papers should not be used. In any event, get samples of several types of paper and make trial prints before making a final selection.

The storage of carbon print jobs is important in preserving the copying qualities and durability of the carbon prints. Always store the sheets in a cool place. Never keep them in the vicinity of a heater for warm air always affects their copying quality. Store the sheets vertically, as is done with envelopes.

Use of the electric heating device requires no special mechanical work. After connecting it to a power supply, simply place the device on the ink fountain. It can also be used in cold pressrooms on regular printing jobs. The device is especially helpful when cold inks tend to "pick".

The ink fountain heating device is listed under Group 72 of our extra accessories.

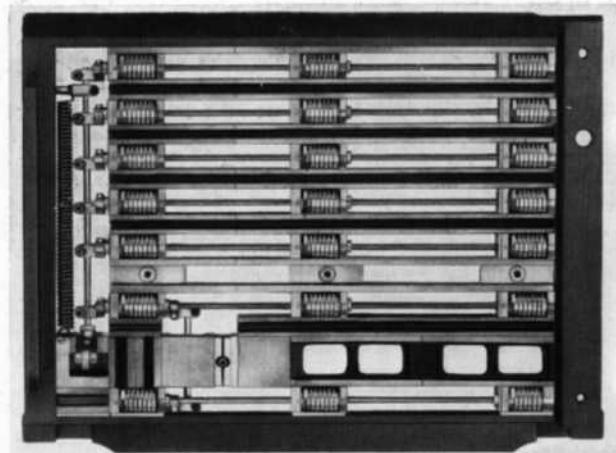
## Numbering

To produce numbering jobs on the Heidelberg, it is customary to use plunger-type numbering machines. These can be used in cases where only a limited number of machines, say 4, 6 or 8 are required. This quantity can be easily controlled. However, when a job calls for more numbering machines, plunger-type machines may bring about difficulties.

The ordinary type of plunger-operated machine will eventually wear down or damage the rollers. It might be well to investigate the low plunger type of machine. Such numbering machines, having a movement of only .040", are now available on the market.

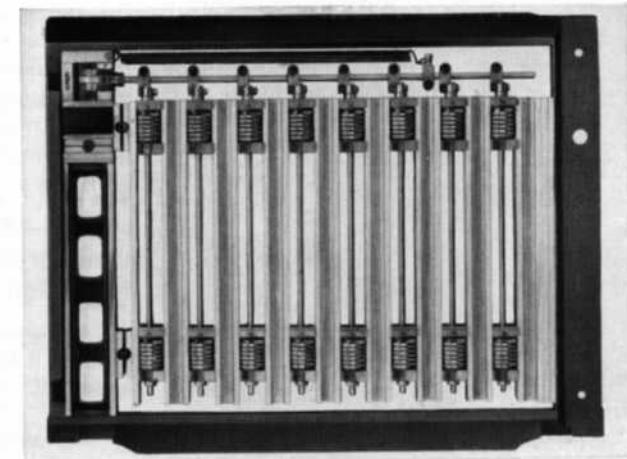
If you have a great deal of numbering to do on your Original Heidelberg, we suggest that you look into the new device we have developed in conjunction with a numbering machine manufacturer. This was done to fully utilize the capabilities of the Heidelberg. This device insures numbering at top speeds, allows the use of more numbering machines, and precludes the usual troubles in numbering. Any desired quantity of machines can be put into position, within the limits of the chase.

These new numbering machines are centrally driven and are actuated by an index-roll mechanism. The driving mechanism is designed to insure constant and safe operating of any quantity of numbering machines mounted in a standard Heidelberg chase. Design of the driving mechanism permits either vertical or horizontal positioning of the numbering machines.



Standard chase with numbering machines and index-roll mechanism.

The index-roll driving mechanism should always be positioned in the extreme left hand side of the chase in order to utilize the maximum printing area.



Standard chase with numbering machines positioned vertically with index-roll mechanism.



Standard chase with numbering machine form in the press.

It is necessary to reduce the length of the form rollers on one side so that the index-roll mechanism does not contact the rollers.

Your Heidelberg dealer will be happy to supply you with the information on numbering machines. Complete instructions for the operation of center drive numbering machines will be provided with them.



### Switch for Starting Motor

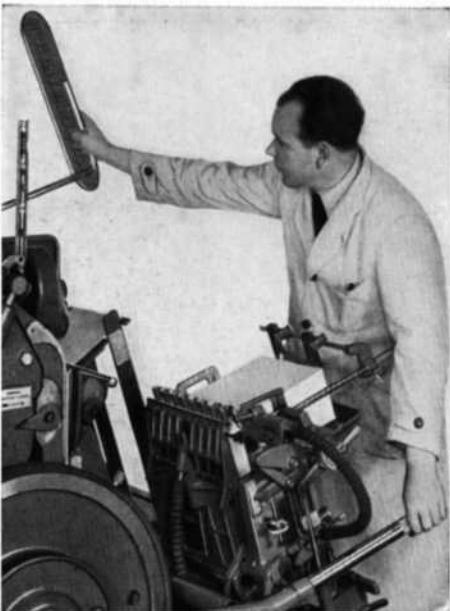
The switch illustrated here is mounted on the left side of the press below the clutch lever and serves to turn the motor on and off. Switch boxes in various sections of the country may vary. The press you operate may have a magnetic starter with push button control.

The motor runs with a constant speed of 1725—1800 r.p.m., and varying speeds are attained with a variable pitch pulley.

If the press is stopped for any length of time, it is advisable to switch the motor off.

To start the 10×15 Original Heidelberg, simply push clutch lever to the left with the left hand. (On the 13×18 Original Heidelberg, turn and push lever.) To stop the press, just turn the handle of clutch lever in a clockwise direction. The clutch lever will then move to the right by itself. The flywheel continues to turn, but the press stops immediately. In this way, the press can be started or stopped at any desired position. It is also possible to inch the press.

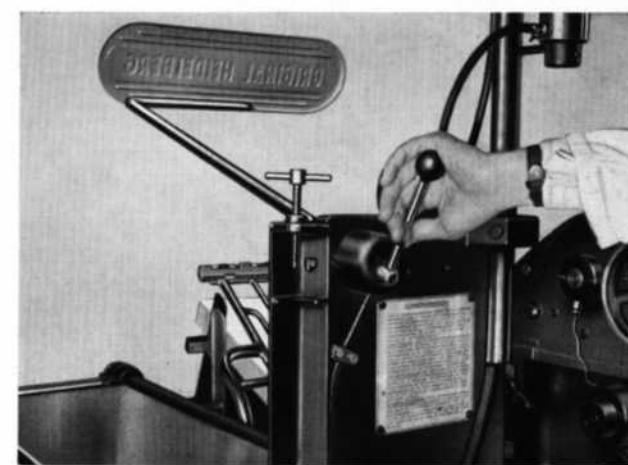
The press can also be stopped immediately by turning up the front guard "Original Heidelberg".

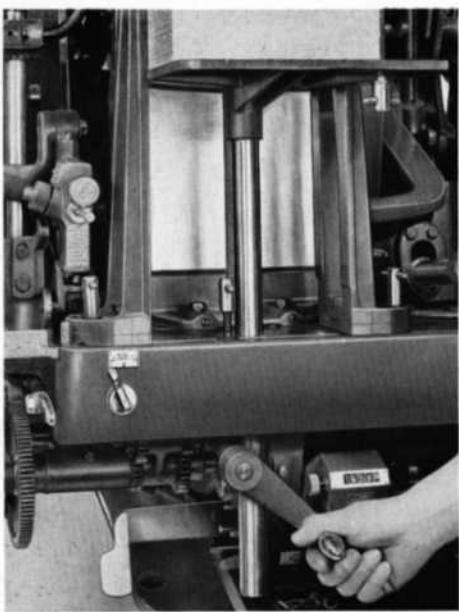


### Starting and Stopping the Press

Before starting the press, the front guard "Original Heidelberg" must be turned down. When turned up (as shown), the starting lever is locked and the press cannot be started.

If the pressman is standing behind the press cleaning the rollers for example, he can stop the press with the lever connected to the front guard.





### Speed Regulation

The speed of the press is regulated by turning the handle at the front of the press. If turned clockwise, the speed increases; if turned counter-clockwise, the speed decreases. Each full turn of the handle increases or decreases the speed approximately 200 impressions per hour. This is a no-step regulation of speed without loss of power.

Limits must be set for speed regulation. This prevents the V-belt from coming off the pulley, or to keep it from striking against the pulley shaft when the two discs are at minimum

and maximum positions. When the V-belt is running on maximum press speed diameter of the pulley, the two hexagon nuts on the adjustment spindle under the motor mount must be turned all the way to the threaded trunnion and locked. The same must be done for minimum speed when the belt is running on the minimum press speed diameter of the pulley.



When installing a press, the erector makes certain that the motor pulley is aligned with the flywheel.

Should the motor have to be removed for any reason later on, it is important that the realignment be done in the same manner.

In aligning, be sure that the outer edge of the V-belt is aligned with the outside edge of the flywheel, when running slow. When running fast, the inside edge of the V-belt should align with the inside edge of the flywheel. The V-belt should never project over the flywheel edge.

To determine whether the motor shaft is aligned with the flywheel shaft, place a straight-edge against the inner rim of the flywheel and the inner rim of the motor pulley.



### Replacing the V-Belt

The Original Heidelberg Platen, 10×15 and 13×18, is supplied with complete electrical driving equipment. The V-belt is properly fitted by the press erector when installing the press. If, after a few years of operation, the V-belt has to be replaced due to normal wear, it can be done by the pressman. He should proceed as follows:

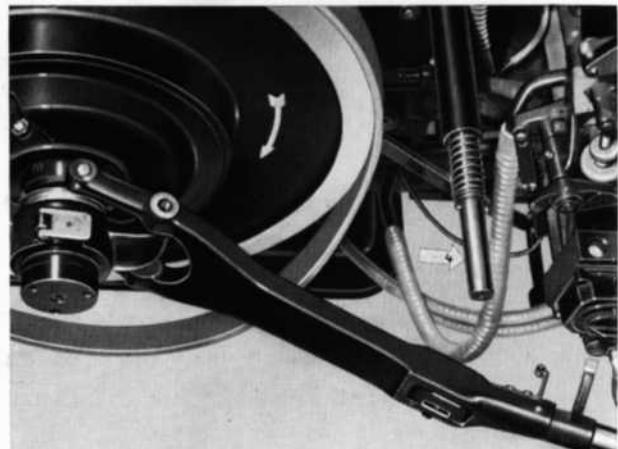


1 in illustration) which fastens the spring sleeve to the clutch lever. The cotter pin (arrow 3) is next removed and clutch lever pin (arrow 2) can then be taken out.

3. The clutch lever is now swung away sufficiently for the worn belt to be removed between the clutch lever and shaft (arrow 4). Be sure that the fork end of the clutch lever does not slip out of the clutch cone. Otherwise, the guide blocks could drop out.

4. The new V-belt is now placed on the flywheel and the clutch lever is reassembled in reverse sequence.

5. The V-belt is now put on the motor pulley and finally, on the flywheel.



1. The flywheel and pulley guard are removed and the V-belt is taken off the motor V-belt pulley.

2. To replace the old belt on the flywheel, it is necessary to disconnect the clutch lever spring sleeve. This is accomplished by first removing the fillister-headed screw, (arrow

6. It is of particular importance that the motor shaft remains parallel with the flywheel shaft. Poor alignment of motor and flywheel shafts would cause rapid wear of the V-belt edges. The alignment of the motor to the flywheel is described in the preceding chapter.

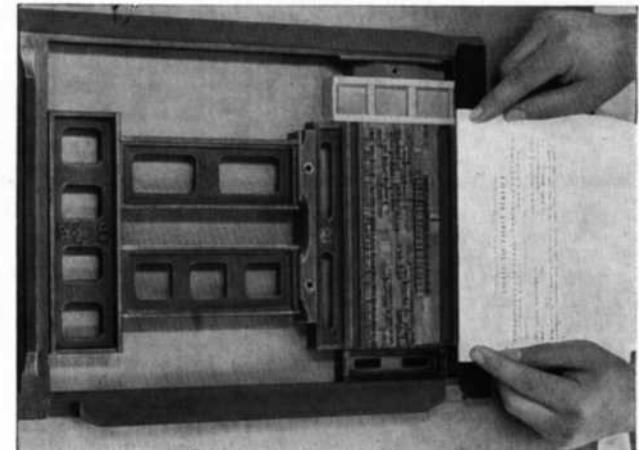
When replacing the V-belt, the motor should be in the maximum speed position. The crank for speed regulation is turned clockwise to the end position.

## Locking the Form

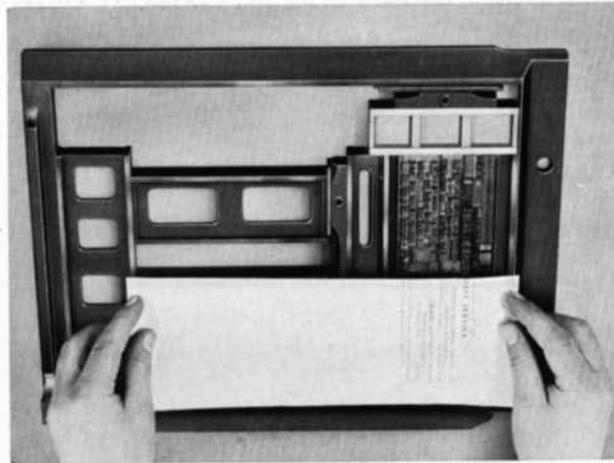
### a) Without Guides

One side of the Heidelberg chase is beveled. This side is always the gripper edge. Allow a gripper margin of 18 points on all jobs. If the margin is to be more than 18 points, a corresponding amount of furniture must be placed between form and the side of the chase. When locking up the form, the stock must extend over the beveled edge of the chase by the amount of gripper margin. In the center of this beveled side, you'll find a mark that corresponds to the center of the feed table.

If possible, the form should always be locked up so that this mark corresponds with the middle of the sheet. However, remember that this center mark can only be used when running without guides. Unlike other platen presses, a form on the Heidelberg does not have to be centered in the chase.



Standard equipment for 10×15 OH Platens includes 2 margin rods. The primary purpose of these two margin rods is to reduce the gripper bite or gripper margin when running business cards or smaller sizes with register guides. (See Pages 80 and 81). However, they can also be used to a good advantage when printing without



guides. Attaching the margin rods to the front standard reduces the gripper bite approximately 6 points.

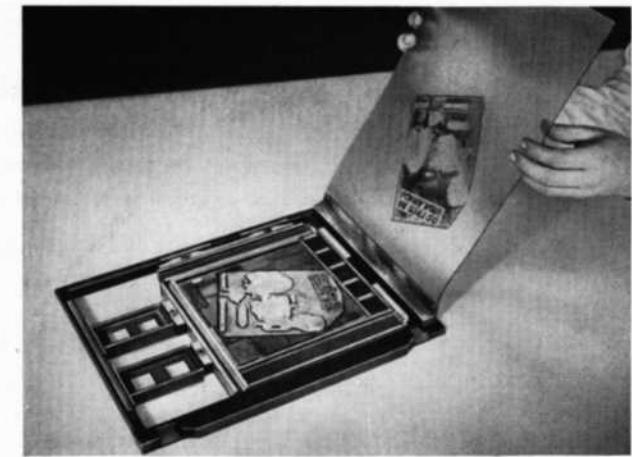
#### b) With Guides

When using the guides, the form has to be locked in the lower right hand corner of the chase. Gripper margin remains the same.

There are two marks on the bottom edge of the chase to indicate the bottom printing margin when working with guides.

The upper mark shows the position of the **nickel** guides, where the minimum margin is  $1\frac{1}{2}$  points if the form is locked at the very bottom of the chase. The lower mark indicates the position of the **brass** guides, where the minimum margin is 14 points. If more margin is required, the form must be moved in the chase.

When lockup is complete, lift the chase over the feeder—press in open position—and insert it between the roller tracks about one inch above the lugs and at a 45° angle from the bed. In this position, the chase fits in easily and may be lowered onto the lugs. Now, with the heel of the hand on the top edge, push the chase into a vertical position so it clamps into place. Make sure it is firmly secured by the chase latch. Tighten the safety screw on the chase latch.



#### Device for Pre-Registering Forms

To lock up forms with accuracy, especially when doing color work, the pre-registering device with transparent sheet is used.

This device can be used with any Heidelberg chase which has been pre-drilled for this purpose.

After the form has been locked and positioned for the first color, and while on the imposing stone, the form is inked with a hand roller. Then, the transparent sheet is placed on the form and an image obtained by firmly rubbing over it with your hand or a rag.

The image obtained is now used to position subsequent forms.

When pre-registering is completed, use a cleaning solvent to wipe off the image. The pre-registering devices for the 10×15 and 13×18 Original Heidelberg's are interchangeable. Upon special request, you can obtain a transparent sheet that is graphed.

## Packing

Packing, like makeready, can take on a great many variations. Paper availability may differ in certain sections, pressmen's thoughts on the matter will vary and then, too, there are many tricks in the trade that bring good results in specific situations. From our world-wide experience on Original Heidelbergs, we would like to suggest the following packing:

### Packing for job work

One Manila top sheet clamped on all four sides.

Three to five sheets of MF book paper or newsprint, the exact size of the platen surface.

One Manila sheet or equivalent weight book paper to be clamped at the top and bottom of platen. This is the tight sheet on which makeready is pasted.

One or two sheets of pressboard as needed, the exact size of the platen surface and placed at the bottom of the packing against the bare platen.

### Packing for Halftones:

Same as above, except that a thin rubber blanket (.010—.012" thick) the size of the plates in the form, is pasted on the makeready sheet directly under the top sheet. To adjust for the thickness of the rubber blanket, use one sheet of pressboard against the bare platen.

The prescribed thickness of the packing is  $1/25$  (.040"), including the sheet to be printed. Remember that the packing should always be smooth and tight. Keep a supply of book paper, newsprint and pressboard on hand, cut to the exact size of the platen surface. Manila tympan sheets, pre-cut and scored for the Original Heidelberg Platens, can be secured from your local paper house.

**It is recommended that the packing always cover the entire surface of the platen, no matter whether printing maximum paper size or not.**

Inside the back cover, you will find two specimen packings for job work and halftones.

### Clamps for Packing

The tympan sheet as well as the makeready sheet are clamped together at the bottom edge with a tympan bar. All other sheets and pressboard need no clamping, but are merely inserted.

Then, as shown in the illustration, smooth the packing with the top tympan bar and press it into place. The left tympan bar is secured in the same manner.



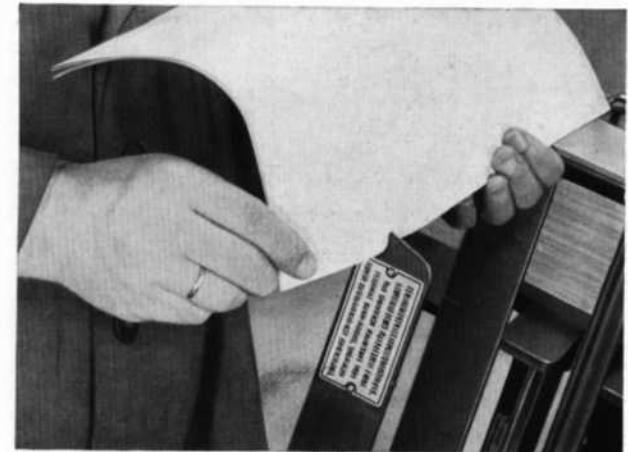


### How to Fasten Packing on Gripper Side

The right-hand scored edge of the tympan is held in place by two clamps. Open both clamps by turning the thumb screws. Insert the tympan, smooth it down carefully, and tighten the clamps.



A good tight packing is important at all times for perfect register. It insures a smooth movement of the sheet by the guides.



### Gauge for Packing Thickness

The packing is  $\frac{1}{25}$  of an inch thick, and should always include one sheet of the stock to be printed.

There is an exact  $\frac{1}{25}$ " slot in the right-hand delivery standard. By using this slot, the thickness of the packing can be checked accurately. Keep this slot clean.

Experienced pressmen may not have need for this packing gauge, for they can check by the impression on the back of the sheet if a sheet has to be added or removed from the packing. If the impression is even, then the packing thickness is correct.

However, if there is more impression at the bottom than the top, then the packing is too thick and one or more sheets must be removed and impression increased. When the impression is heavier on the top, the packing must be increased and the impression decreased.

## Makeready

Makeready on the Original Heidelberg is the same as on every other platen press. Since the grippers move over the packing with a clearance of only 2 $\frac{1}{2}$  points, care must be taken to insure that the packing is not too thick. It should be exactly  $\frac{1}{25}$  of an inch thick. Remember that for every sheet of makeready added, a corresponding sheet must be taken out of the packing to bring it to  $\frac{1}{25}$ ".

If the form consists of type matter, it is best to underlay first. If further makeready is necessary, paste it on the manila makeready sheet.

When printing halftones, a rubber blanket placed on the manila sheet over the makeready will aid considerably. This rubber blanket is about .012" in thickness. See recommended types at the back of the manual. For smooth feeding of stock, particularly when doing register work, a tight damp tympan over the rubber blanket and makeready is recommended.

## Adjusting Impression

Impression can be thrown on or off, increased or decreased even while the press is running. The illustration shows the impression throw-off lever pulled out. The impression is on. To throw off the impression, lift the ball-handle gently and push the lever in towards the machine. To increase the impression, the lower knurled ring is turned clockwise. To decrease, it is turned counter-clockwise. The upper knurled ring is a lock nut, and can be tightened by hand to prevent the impression adjustment from changing while the press is running. Use the scribed numbers on the lever "0—1—2—3—4" as a guide for adjusting impression. To prevent excessive impression when a new type form is placed in the press, first return impression adjustment back to "0" position. After pulling the first proofs, adjust the impression as needed.

We should again like to emphasize that correct packing thickness is very important. Be sure the entire surface of the packing is smooth and tight.

Above instructions pertain to the 10x15 Original Heidelberg only. See page 120 for 13x18 Original Heidelberg impression adjustment.



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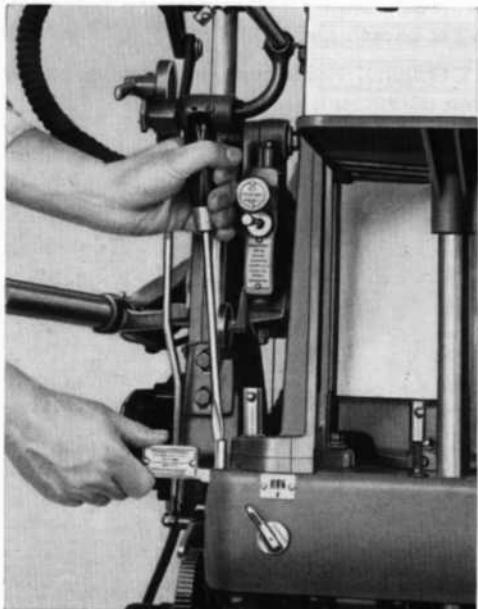
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## Adjustments when Printing with Guides

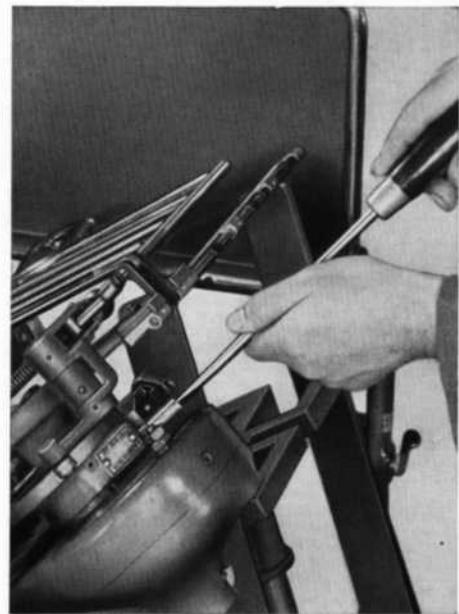
Three adjustments have to be made on the press when printing with guides. There are instruction plates on the machine for these three adjustments.



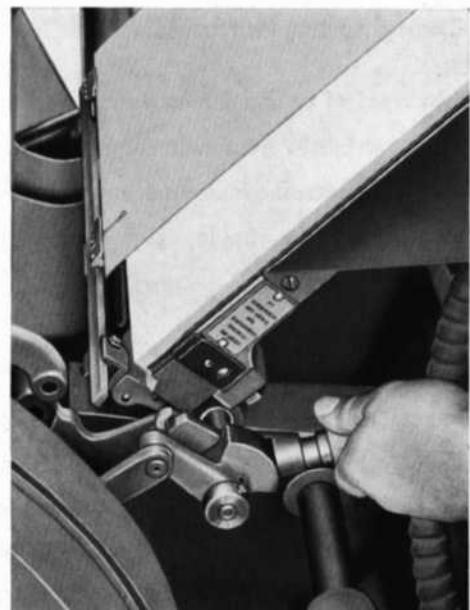
**No. 1** — The left-hand feed table standard must be moved to the left against its stop. This stop must be adjusted for brass or nickel guides, whichever are to be used. (See instruction plate at the stop.)

For the 13 x 18 Original Heidelberg refer to Page 120.

**No. 2** — The illustration shows the screwdriver inserted in the slot of the extended screw on the gripper head. First, take this screw out so that the cam can be moved forward against the stop. Then replace and tighten the extended screw. In this position the cam causes the gripper to open to permit the bottom guides to register the sheet.



**No. 3** — The handle shown in the bottom illustration engages or disengages the movement of the guides. When guides are to be used, turn the knurled handle so that it drops and its pin engages with the hole in the lever below. When printing without guides, disengage by raising knurled handle and rotating  $1/4$  turn to the right or left. In this position the handle can be used manually to raise the guides to their printing position. The guides can be engaged or disengaged only when the press is stopped.





### Changing the Bottom Guides

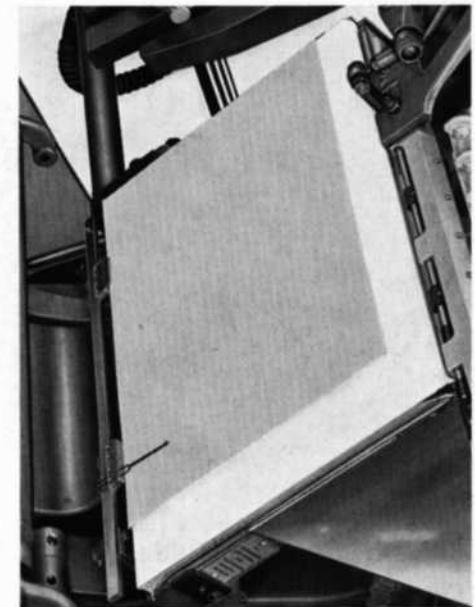
Two types of bottom guides, brass and nickel, are supplied with the press. When using the BRASS guides, the lower paper margin is 14 points. When using the NICKEL guides, the lower margin is  $1\frac{1}{2}$  points.

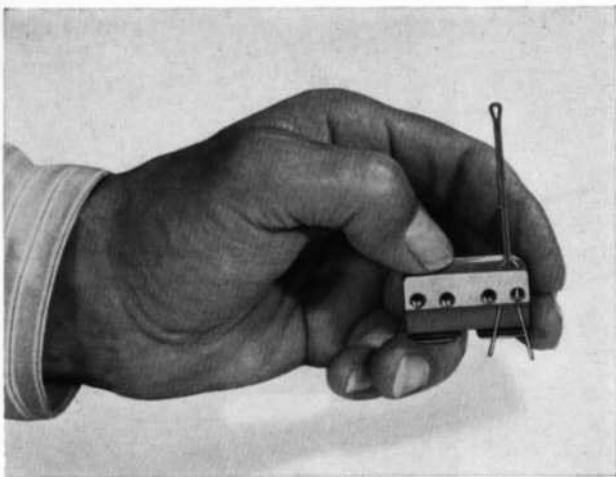
The brass guides should be used on all jobs that have sufficient margin at the bottom of the sheet. If the lower margin is **less** than 14 points, then use the nickel guides.

The right hand brass guide on the pump side of the press is pulled off to the right, and the right-hand nickel guide is then slipped on to the guide bar. The left-hand movable brass guide is taken off by tilting it towards the form and the left-hand nickel guide is then snapped on. The left-hand brass and nickel guides should not move too easily on the guide bar. In case they do, simply remove guides from bar, loosen the screws, adjust the tension of the leaf springs, then retighten screws.

When running light-weight papers, the corner of the sheet extending beyond the end of gripper may not lie flat and will buckle when being transferred to the right-hand guide. This will cause a difference in register. To overcome this difficulty, remove the right-hand brass guide and snap it back on the bar inside the bar bracket. This enables the sheet to lie on the guide farther away from the corner of the sheet so that it can be smoothly pushed to the side guide. Do this only when running with brass guides. The right-hand nickel guide must never be used on the bar inside the bracket.

After completing a run of such light-weight stock, return the right-hand brass guide to its former position outside the bracket.





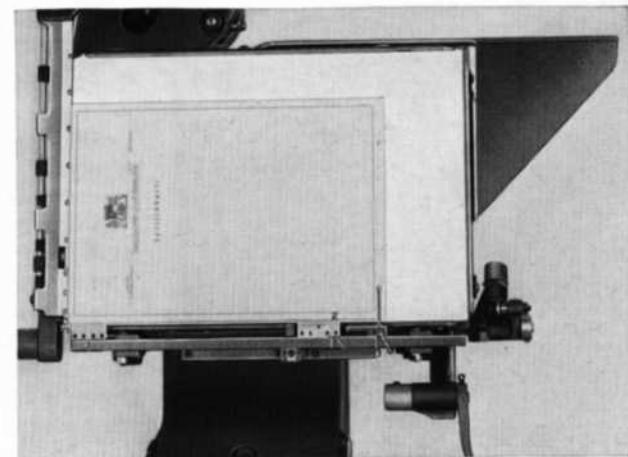
### Adjusting Bottom Guides

The left-hand guide on the flywheel side of the press can be moved on the bar to correspond with the size of the sheet being printed. This guide should not be positioned too near the end of the sheet or too near the center of the sheet.

Please note that there is a pin in the guide which naturally must not be permitted to hit the type or cuts in a form. In many cases, the form determines the position of the guide and pin. On narrow margin jobs, leads or slugs should not be used between bottom of form and chase.

The illustration shows the guide with pin as it appears when snapped on the bar. It should only be taken off the bar when changing from brass guides to nickel guides, or vice versa. The pin must be taken out before the guide can be removed from the bar.

The pins serve to guide the sheet accurately onto the guides and hold it there. Guide pins are supplied in various lengths. When printing a job at high speeds, it is best to use a longer pin. After inserting a pin into the holes of the guide, spread the ends of the pin slightly so the pin cannot work out.



### Auxiliary Pin Guide

In addition to the two brass guides and the nickel guides, a pin guide is furnished with the Heidelberg. The brass and nickel guides register the sheet, while the pin guide serves only to hold an auxiliary pin. The pin guide is 2 points lower than the brass guides, and can be positioned anywhere on the guide bar inside the brackets. In printing a job with very little margin, especially when there are no gutters in the form, only a short pin can be used in the left-hand (flywheel side) guide. If a stock has the tendency to go over the short pin, which would cause register differences, it is advantageous to use the pin guide. This enables the use of a longer pin to control the outside corner of the sheet and prevent it from going over the bottom guides.

Remember that the sheet itself does not come to rest on the auxiliary pin guide. The pin simply serves to control the sheet.

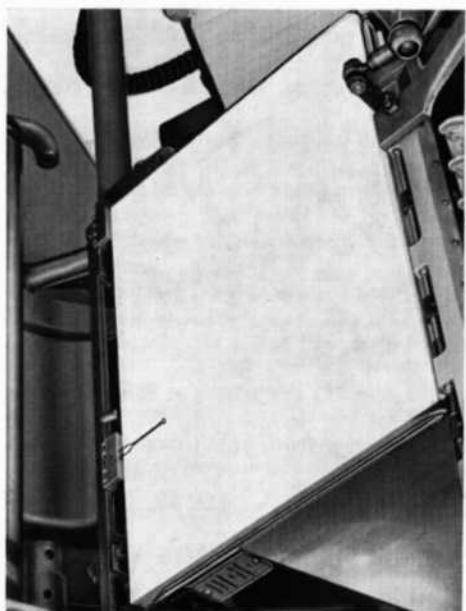


## Adjusting the Slide Spring

The slide spring (shown in the illustration) does not have to be used when working with brass guides. However, it should be used with the nickel guides when size of the stock permits. The slide spring is adjusted on a bar of its own just below the guide bar. Along with the auxiliary pin guide, it serves to guide the sheet onto the nickel guides. Whenever the position of the left-hand (flywheel side) **nickel** guide is changed, the slide spring must also be moved to a new position. The slide spring must always be next to the left-hand movable nickel guide. To prevent the slide spring from being bent by the side movement of the left-hand nickel guide, adjust the position as follows:

Disengage the guide bar so that it can be operated manually. With the platen open, the slide spring can be placed either to the left or right of the left-hand nickel guide. If positioned on the right, then it must be pushed over to the guide when the bar is at its top position. This is the normal position for the slide spring. If positioned on the left, then the slide spring must be approximately  $\frac{3}{8}$ " from the guide when the bar is raised to its top position. This clearance is necessary because the guide bar moves sideways when pushing the sheet to the side guide. When the guide bar drops down, be sure it does not strike the slide spring. **When changing packing on the platen, the slide spring must be taken off.**

It is recommended that the slide spring be used with the brass guides on the 13 x 18 Original Heidelberg.



## Micro-Adjustment of Bottom Guides

The guide bar is adjustable up or down by 4 points at either bracket.

To do so, loosen the hexagon nut with the small socket wrench. Place the small screwdriver through the hollow wrench and adjust the bar higher or lower by turning the screw. The nut is then retightened with the wrench.

When the bar is in its top position against both brackets, the lower paper margin is then at its minimum.

The guide bar is usually adjusted when printing stock has not been cut at right angles, or to obtain hairline register.





### Adjusting the Side Guide

After loosening the fillister-headed screw, the side guide can be adjusted sideways by 4 points. When the side guide is in as far as possible, the gripper margin is 18 points.

Minor adjustments for hairline registering can be made without changing the form.

### Adjusting the Paper Tables

#### (1) Feed Table

The feed table can be raised or lowered by pressing down the checking pawl lever with one hand and cranking handle clockwise or counter-clockwise with the other hand.

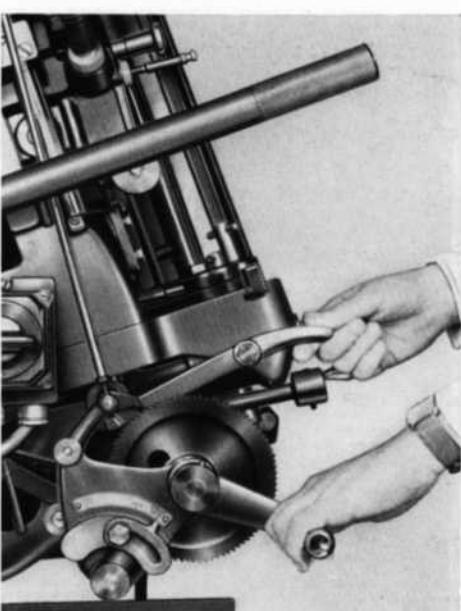
Since feed and delivery table are connected by a single driving mechanism, the delivery table must first be disengaged before the feed table can be lowered. To do so, hold the delivery table with the left hand, loosen the handwheel at the lower right front (under the table base) and lower the delivery table.

#### (2) Delivery Table

To lower the delivery table, you must disengage the delivery clutch at the right under the table base by turning the handwheel counter-clockwise. In doing so, hold the delivery table with the left hand so it will not drop down. The delivery table can be brought to any desired position independent of the feed table.



The delivery table can be raised by hand **without** loosening the handwheel.



## Positioning

### (1) When Printing without Guides

If a form, when locking up, is centered to the center mark on the chase, as mentioned previously, the positioning of the stock on the feed table is greatly simplified, as the center mark of the chase coincides with the center of the front feed standard. Place one sheet of the stock to be run on the feed table at its top position, center the sheet, set one side standard to the sheet and pull a proof. After the correct position has been obtained, set both side standards to a single sheet with the feed table in the top position. The table can then be lowered and loaded with stock.

### (2) When Printing with Guides

When printing with guides, the left-hand feed standard must always be against its stop. When working with nickel guides, the standards must be farther to the right than when printing with brass guides. The instruction plate on the left-hand feed standard gives you this necessary information.

## Loading Stock

The stock to be run is loaded on the feed table in its lowest position.

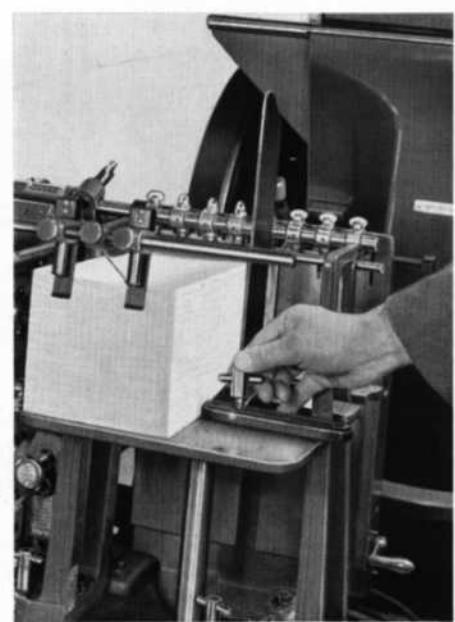
Before loading the table, riffle the stock, especially if it tends to hang together on its cut edges. Fanning the stock before loading is very important if a job is to be completed with a minimum of press stops. Proper preparation of stock will make your work easier.

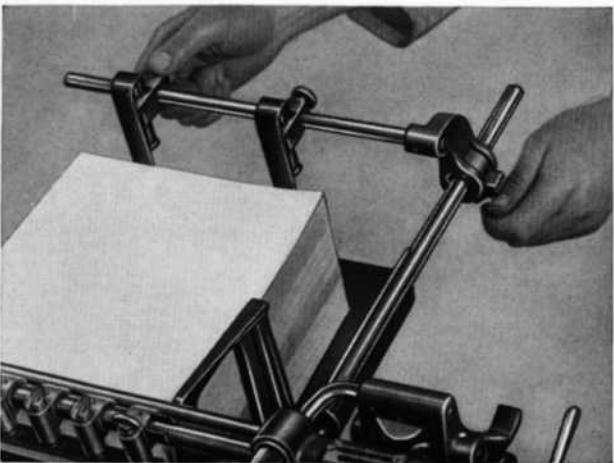


## Loading Narrow Stock when Printing with Guides

When printing stock less than  $6\frac{3}{4}$ " in width and using the guides, the right-hand feed standard will not reach the pile. Use the special standard shown in the illustration in place of the right-hand feed standard. This special standard is placed on the feed table and secured with the clamping screw.

When this special standard is taken off the clamping screw should be screwed into the feed table from below, so that it is always readily available.





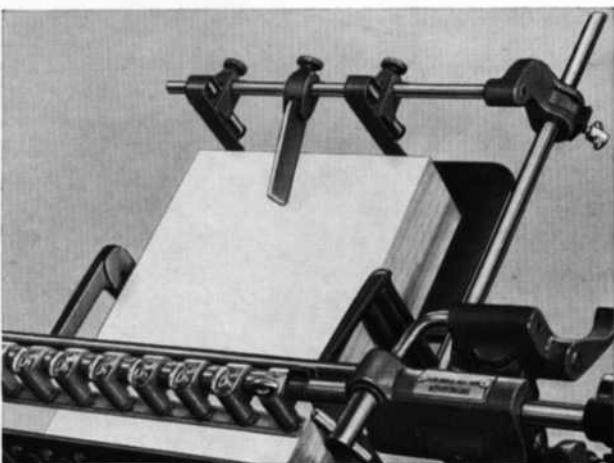
### Sheet Steadiers

When loading stock, the sheet steadier bar can be swung upward to make the feed table more accessible. When loading small sheets, the sheet steadier bar is first pulled back and then swung up.

After the stock has

been loaded, the sheet steadiers are set lightly against the pile and the clamping screw tightened.

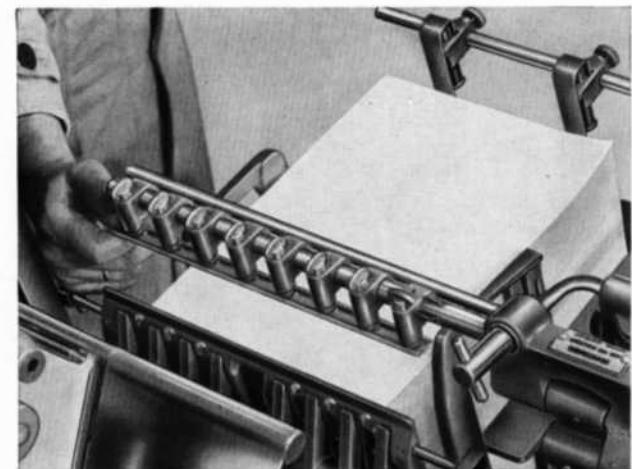
For extremely long sheets, two of the slow-down fingers furnished with the press can be placed on the sheet steadier bar and used as side guides at the rear of the pile.



### Sheet Slow-Down Finger

Some stocks will tend to drag the next sheet forward as the top sheet is being picked up. This is especially true with some types of rough stocks and light-weight papers.

In such cases, a sheet slow-down finger, as shown in the illustration, is placed on the sheet steadier bar and clamped at the desired position to prevent sheets from inching forward.

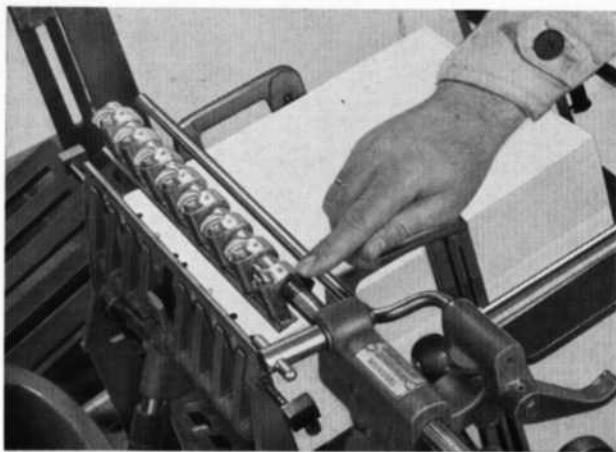


### Pink, Red, and Yellow Sucker Bar Slides

When printing very light stock, such as onionskin or tissue, the pink slide with the metal insert is slipped over the bottom of the suckers from the right. The small holes in the slide prevent the suckers from picking up more than one sheet. The suckers beyond the edge of the pile must be turned off.

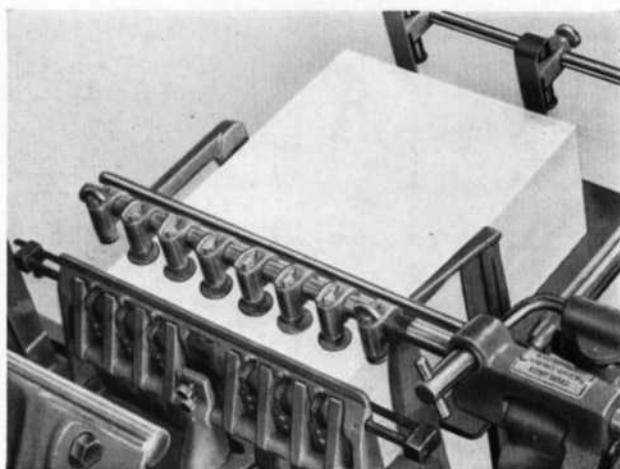
For light to medium weight stocks, the red slide is used. Should the suction be insufficient, the yellow slide can be used, as this slide has holes corresponding to those in the sucker bar.

The use of any of the slides provides a smoother pick-up and transfer of the sheets to the gripper, and prevents the sheet from hitting the suckers as it goes into the platen.



### Suction Release

For porous stock requiring very little suction, the vacuum in the sucker bar can be reduced by turning the clip as illustrated, exposing the vacuum release hole in the sucker bar.

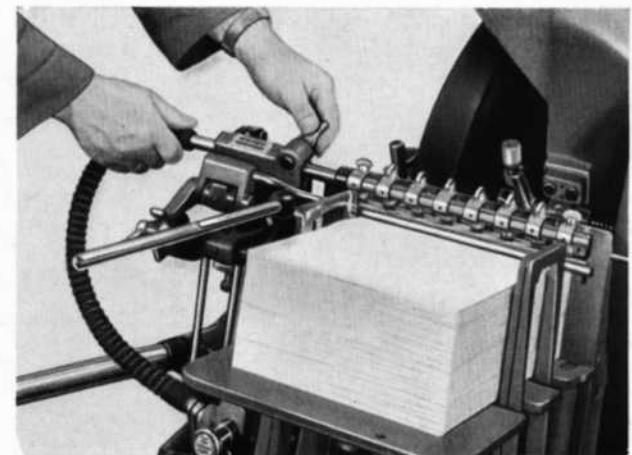


### Rubber Suckers

Rubber suckers will increase the suction, and are used to advantage on heavy cardboard or curly envelopes when normal suction is insufficient. Sucker discs are snapped on as many suckers as are necessary to cover the sheet. Remaining suckers are turned off. Special rubber suckers for running extremely heavy cardboard are available.

### Lateral Adjustment of the Sucker Bar

If it is found that the suckers are not centered correctly on the feed pile, the sucker bar must be moved laterally to the right or left, as illustrated. Retighten the clamping nut after the adjustment is made. Close suckers that extend over the edges of the stock.

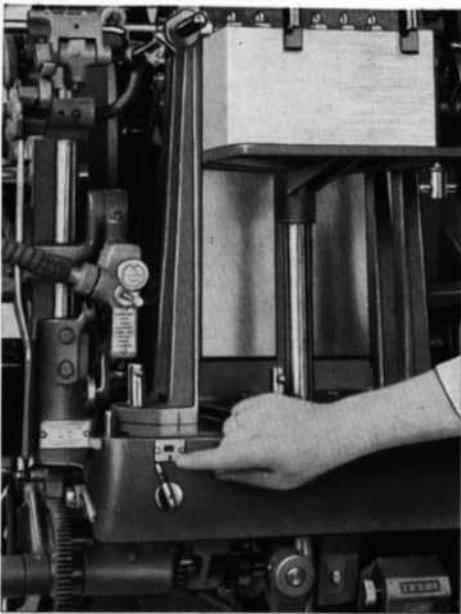


### Changing the Position of the Front Feed Standard

If the stock or the form is not square, correction can be made by changing the angle of the front feed standard. The two hexagon bolts on the base of the front feed standard must be loosened, and by turning the right and left adjusting screws, the position is changed. The pointer indicates the amount and direction of the change. The hexagon bolts must be tightened after adjustment is made.

After completing the run, the front feed standard must be brought back to square as shown in the illustration.





### Air Blast for Feed

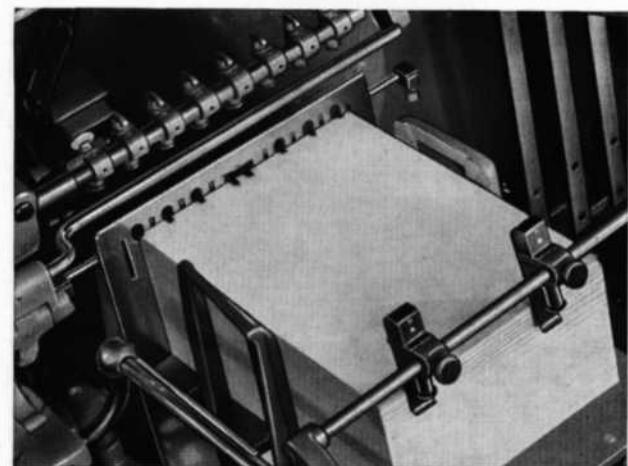
Sheet separation on the feed table is largely controlled by the air blast. The valve shown in the illustration controls the amount of air, and adjustment can best be made while the machine is running. Air blast must be decreased for light-weight stock, and increased for heavier stocks.



### Side Blast and Tripping Springs

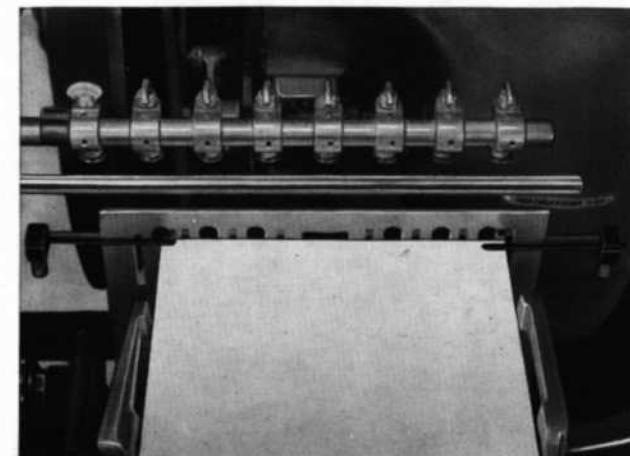
In addition to the air blast in the front feed standard, separation is aided by the blast from the side standards. Air flow from both is controlled with the valve shown

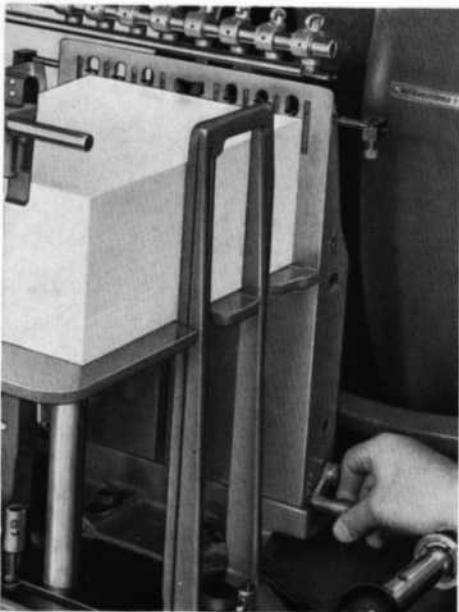
in the top illustration. Sheet separation is also aided by the tripping springs mounted from behind the front feed standard. The springs are adjusted according to the length you wish



them to extend over the front edge of the pile. Depending upon the weight of the stock, make adjustment by changing their position on the bracket by hand. The spring in the center of the pile is held by the lower thumb screw and adjusted with the upper thumb screw.

For additional sheet separation, tripping springs can be mounted from the right and left of the pile as shown in bottom illustration. Occasionally, you'll find that some types of cardboard feed better by retracting the front tripping springs, and using springs on the right and left corners of the pile.





### Adjusting Position of the Feed Blower

The feed blower can be adjusted up or down by using the handle shown in illustration. When light to medium weight stock is flat, the blower will normally be in its top position. When running heavier weight stock the blower is adjusted to a lower position.

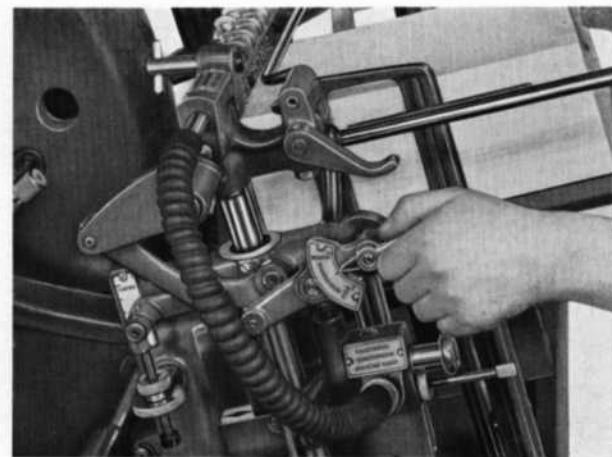


### Setting Tilt of Sucker Bar

The tilt of the sucker bar can be adjusted while the press is running. The indicator scale on the press shows in which direction adjustment must be made. The upper locking nut should be tightened when the adjustment has been completed.

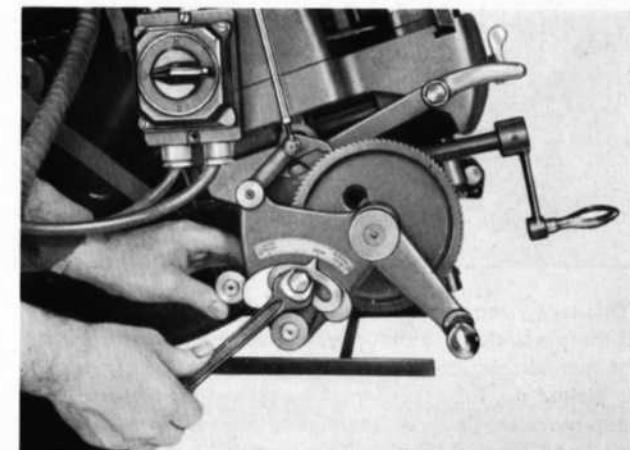
### Pile Height Control

Pile height is controlled by moving the handle shown in the illustration. Although the indicator plate shows marks for various weights of stock, the condition and type of stock will also determine the adjustment required. Set the pile height control to the position that insures smooth and uninterrupted feeding.



### Increasing Speed of Feed Table Lift

The indicator shown in the illustration should normally be set on position "normal paper". When printing heavy or bulky stock and the feed lift is not sufficient, the indicator is placed on position "cardboard" or "heavy cardboard". It is important—with the increased table lift—that the pile height control indicator be at the cardboard position. The adjustment is made as shown, and should be returned to the normal paper position at the completion of the job.

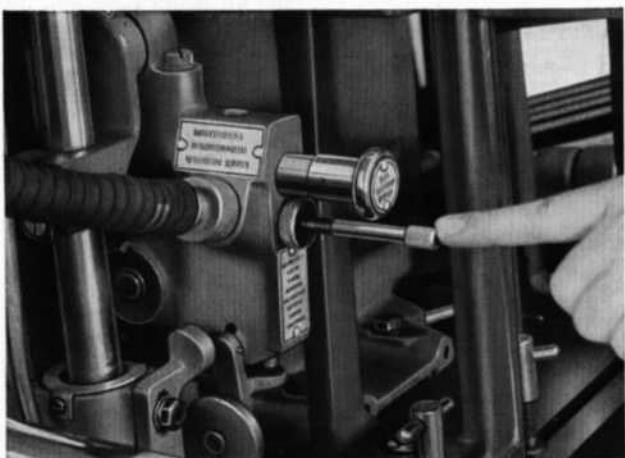




### Suction Trip

This knob labeled "Pull to Trip Suction" enables the press to be run without picking up sheets. When the knob is pulled out, the press will neither pick up sheets nor stop automatically. With the knob pushed in, the machine will pick up sheets or stop if sheet is not picked up.

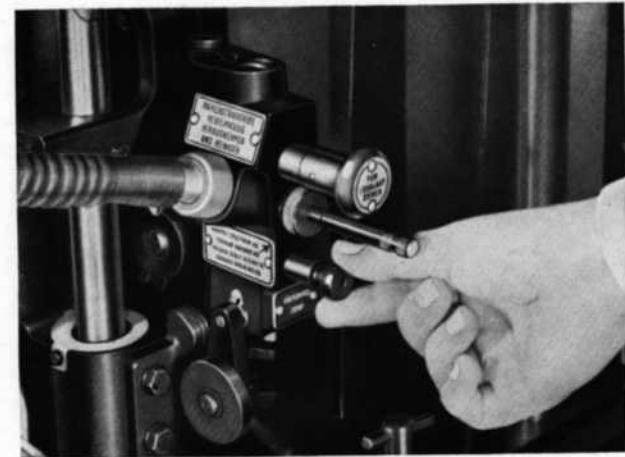
This operation can be done while the machine is running.



### Automatic Stop

This screw regulates the automatic stop.

If the press stops continually, although sheets are being picked up, the screw must be turned counter-clockwise. If, however, the press continues to run when no sheet is picked up, the screw must be turned clockwise. The latter makes the automatic stop more sensitive. As mentioned above, the automatic stop will not function when the knob labeled "Pull to Trip Suction" is pulled out.



### Running Lightweight Stock

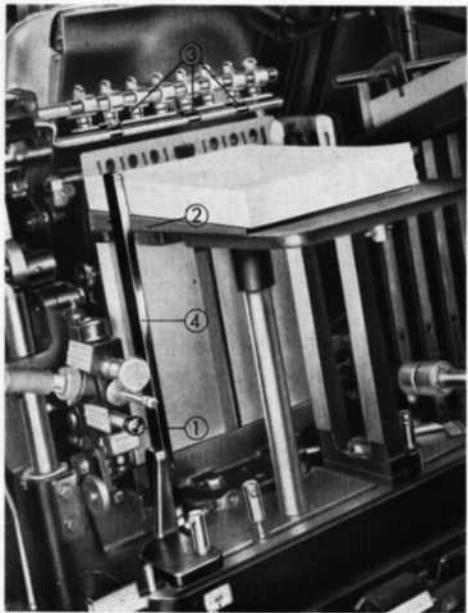
Practical high printing speeds when running lightweight stock largely depend upon good sheet transfer from the sucker bar to the rotating grippers. For such stocks, the "Thin Stock Knob" should be pulled to its outer position. This enables the sheet to reach the printing position smoothly, since the suction is not released when the sheet transfers to the gripper.

When running thin stocks with the Thin Stock Knob pulled out, the pink sucker slide with the metal insert should be on the suckers. With the Thin Stock Knob pulled out, lightweight papers can be run better with less tilt or even with no tilt.

To insure a smoother feed of the sheet over the left-hand feed standard after the sheet is picked up from the pile, put one of the sheet slowdown-fingers (Illustration Page 64) on the sheet steadier bar and locate the finger so as to rest slightly on the rear of the feed pile. It is very important that the stock be fanned thoroughly before loading, and a correct adjustment of the sheet separators at the feed pile. This will reduce press stops to a minimum throughout the job. Push thin stock knob in when normal stock or cardboard is run.

Further hints on running thin stocks are given on Page 23.

As a further aid to running **very** thin stocks, such as onionskin and tissue papers, an extra accessory has been developed which is illustrated and described on the following page.

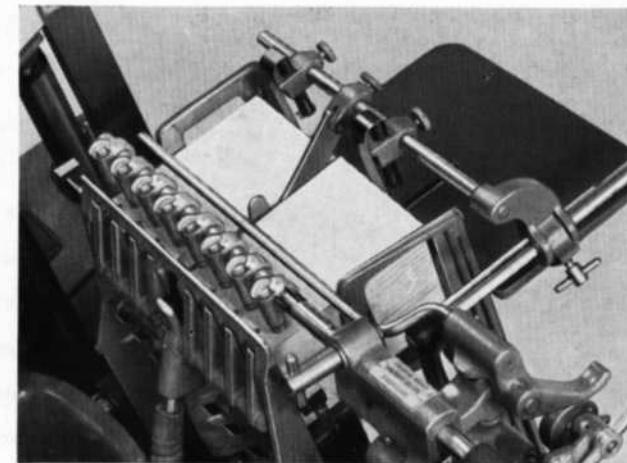
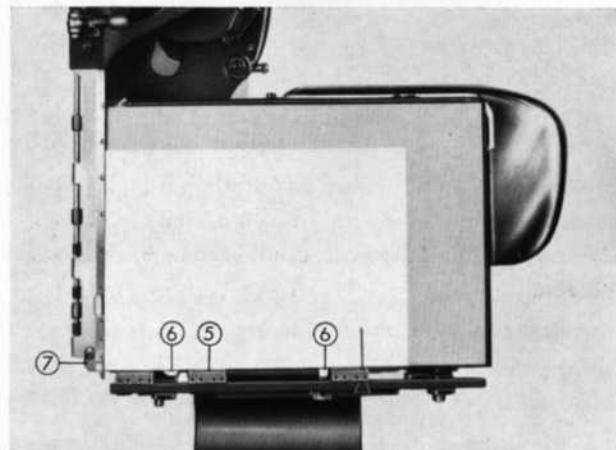


### Extra Accessory for Feeding Very Thin Stock (Group T 80)

For shops that run a substantial quantity of jobs on very thin stocks, the extra accessory T 80 is recommended. The usual difficulties encountered when printing very thin stocks are considerably reduced by use of this extra accessory. It also insures register at reasonable production speeds. Because extremely thin stocks tend to curl, wedges for the feed and delivery tables (2) help to eliminate the problem by decreasing the angle of the feed and delivery tables. In addition, feed tongues (3) which are attached to the feed table height control bar, their flat surface facing the feed pile and sucker bar, further tend to smooth out the sheets.

The special lower narrow feed standard (4) at the left of the feed table permits the thin sheets to glide smoothly to the platen. When printing with guides, a third guide (5) to support the thin sheet is positioned on the guide bar approximately centered in relation to the sheet. To provide further support for the sheet, two spring guides (6) are positioned alongside of each guide. Finally, extension tongues (7) attached to each rotating gripper control the lower corner of the sheet which normally extends beyond the end of the grippers when running with the guides.

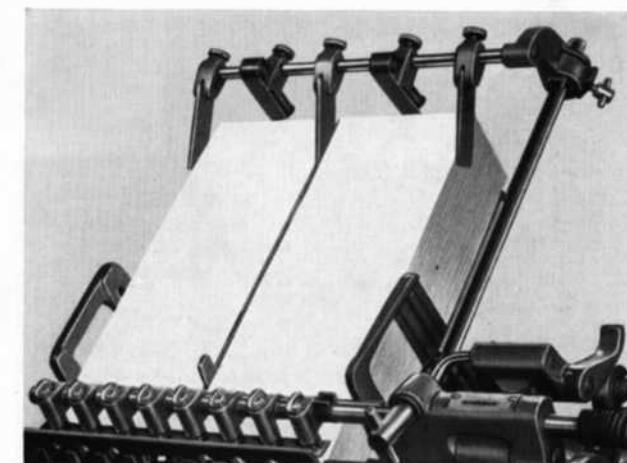
It is recommended that the brass guides be used as much as possible when running very thin stock. When nickel guides are required, the extension tongues must be removed.



### Feeding Two-Up

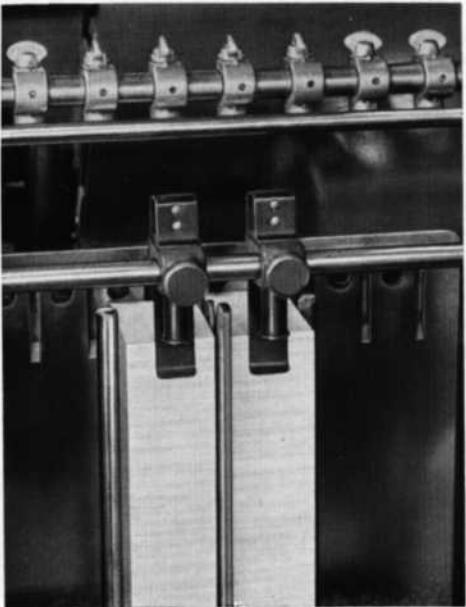
For printing two separate sheets at the same time, such as envelopes or post cards, the regular feed side standards are used. Simply place the center divider furnished with the machine through the slot in the center of the feed table, and fasten at the base of the front table with the screw provided.

If additional support between the piles is desired, one of the slow-down fingers can be placed on the sheet steadiers bar as shown above. The slow-down fingers are of the same thickness as the center divider.



### Feeding Long Sheets Two-Up

When printing without guides, register depends on a well controlled feed pile. For this reason, when printing long sheets two-up, more support at the rear of the pile may be had by using all three of the slow-down fingers. They are mounted on the sheet steadiers bar, one in the center of the pile, and one on each outside edge of the pile as shown above.



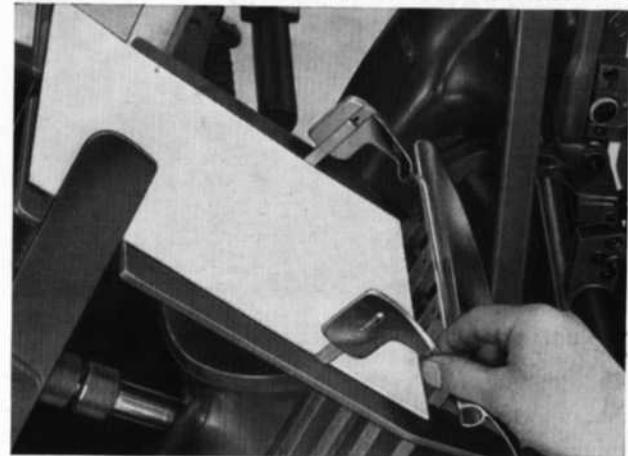
## Feeding Small Sizes

### Two-Up

For printing small sizes two-up, the two round rods furnished with the machine are used in place of the regular feed side standards. The center divider is still used in the middle of the pile. These round rods are called auxiliary side standards. They can be inserted through the corresponding slots in the feed table, and are fastened with the bolts normally used with the regular feed side standards.

## Setting the Delivery

After having positioned the sheet to the form on the feed table, run one sheet through, and stop press with the sheet still in the gripper on the delivery side. In this position, the delivery side standards can be set to the right and left edges of the sheet. Also, at the rear of the sheet, the small delivery side standards are set as shown in the illustration. There are three of these small delivery side standards furnished with the machine, enabling one to be used in the center of the pile in conjunction with the center divider when running two-up. All delivery side standards should be set as close as possible to give a well jogged pile, but not so close as to prevent the sheet from falling freely.

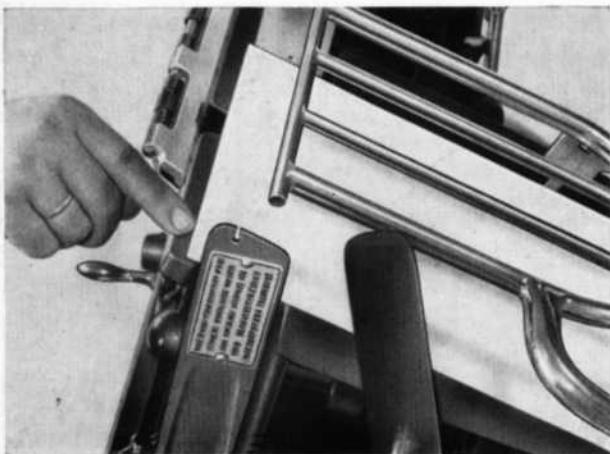


On the delivery, the regular delivery side standards are used along with the delivery center divider.

## Setting the Rear Delivery Standard

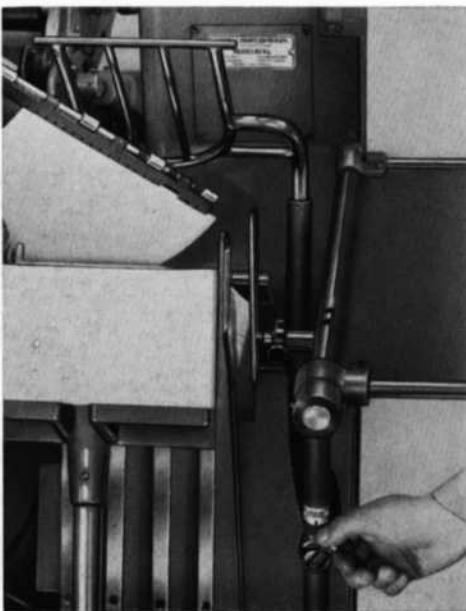
After the clamping lever (shown in the illustration) has been loosened, the rear delivery standard can be moved forward or backward until





### Adjusting the Delivery Blast

The amount of air blast through the traveling delivery blower is regulated by means of the valve illustrated. The blast should be regulated while the machine is running and according to the speed of the machine, size of the sheet, and various types and weights of stock.

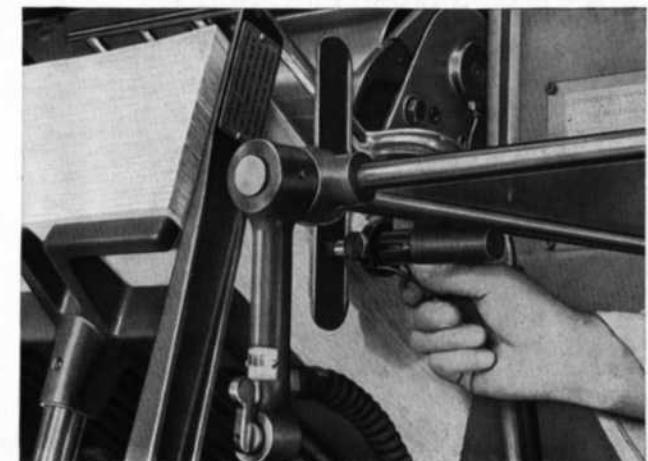
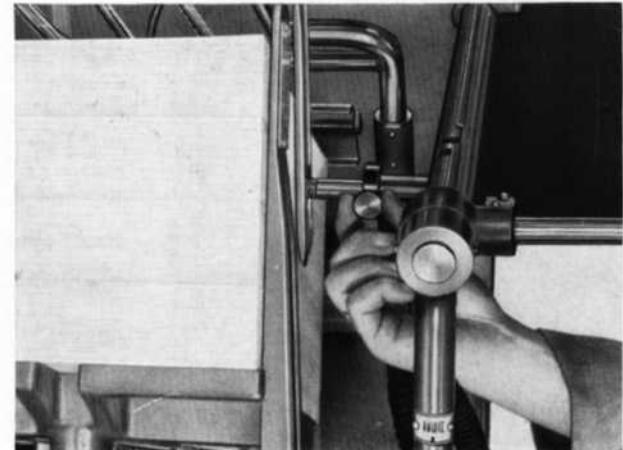


Since the blast for both the feed and delivery is obtained from the same air supply, decreasing one will increase the other. It is then possible to get more blast on the delivery by decreasing the blast on the feed. This, of course, works both ways, and by decreasing the blast on the delivery, more blast may be had at the feed.

the gripper edge of the sheet is approximately  $\frac{1}{2}$  inch from the front edge of the delivery table, as shown in the illustration. Tighten the clamping lever after the adjustment is made.

### Delivery Jogger

An automatic sheet jogger is on the right of the delivery, and may be used to get a better jogged delivery pile. To position the sheet jogger, loosen the thumb screw as shown in the illustration, and allow the sheet jogger to set itself against the edge of the pile, then retighten thumb screw. The motion of the sheet jogger is stopped by moving the small angle lever to the horizontal position as shown in the lower illustration. With the lever in the vertical position, the sheet jogger will operate. Bear in mind that the sheet jogger is pneumatic and only operates when the feeder is picking up sheets. At the completion of the job, the thumb screw is again loosened and the sheet jogger returned to the locked position.





### Printing Business Cards with Guides

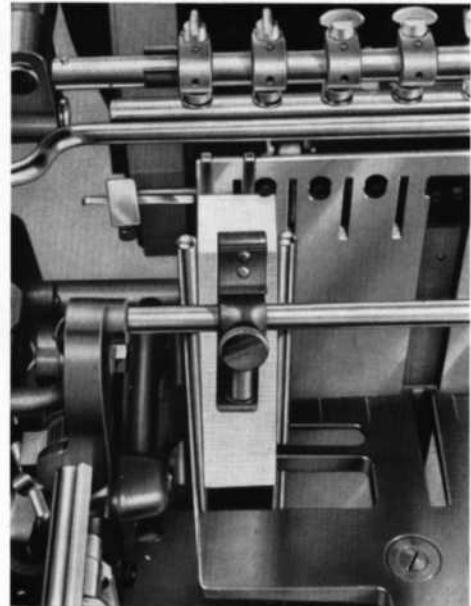
Business cards and stock down to  $1\frac{1}{2} \times 2\frac{3}{4}$ " in size can be run with hairline register. On these smaller stocks, however, the regular side guide does not reach down far enough to register them, and the extension side guide must be used. As shown in the illustration to the left, the extension side guide is merely screwed to the back of the same bracket which carries the regular side guide. It is not necessary to remove the regular side guide when using the extension side guide. Since the extension side guide is designed for a narrower printing margin, be sure that it is removed at the completion of the run, otherwise register could be hampered on a normal size sheet.

When printing business cards, it is only necessary to use the righthand nickel guide.

The illustration shows a card in printing position at the lower righthand corner of the platen, and the position of the nickel guide.

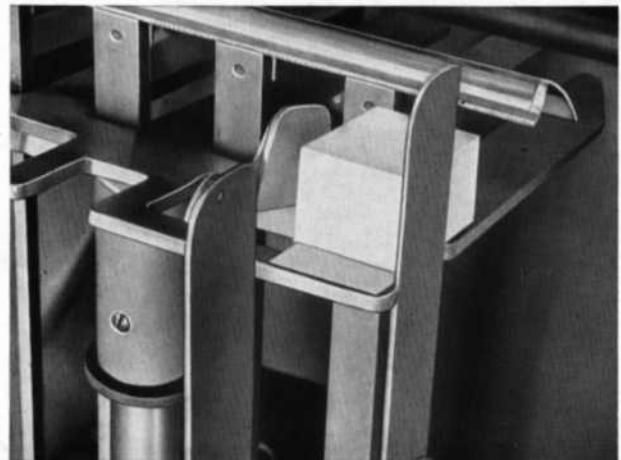
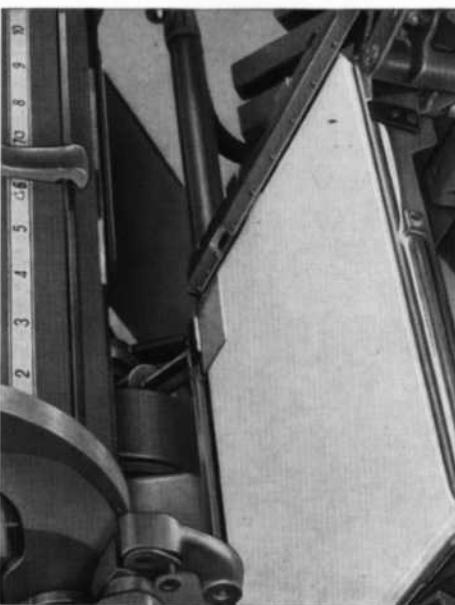
At the feeder the auxiliary side standards (Round Rods) must be used when running business cards and other small sizes. The left-hand auxiliary side standard is not set against the regular side standard stop, but instead against an angle piece located on the table base.

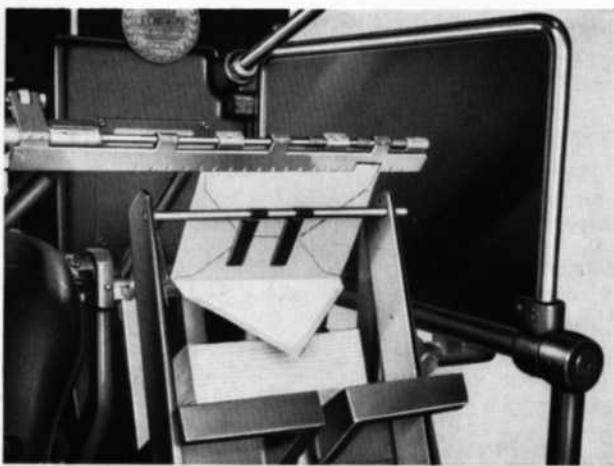
Also, since the extension side guide is designed for a reduced printing margin, the two margin rods for reducing the gripper bite must be used and are placed on the front standard. The illustration shows the margin rods and proper setting for business cards or small sheets on the feed table.



### Delivery of Small Sheets when Printing with Guides

Setting the delivery for small sheets printed with the guide can be done several ways. The illustration shows the two-up partition standard at the left of the pile and the regular side standard at the right and with the two small delivery side standards removed from the rearstandard. Some pressmen prefer to use the small delivery standard rather than the two-up partition standard on the left of the pile. Or, the regular side standard is moved away and two of the small side standards used.





### Delivery of Irregular and Small Sized Sheets

To improve the delivery of irregular or small sized sheets, the rod with slide springs can be attached to the left-hand delivery side standard as shown. The slide springs may be adjusted according to type or condition of stock. As illustrated, envelopes run "foot to the gripper" is a good example of this.



### Decreasing Blast

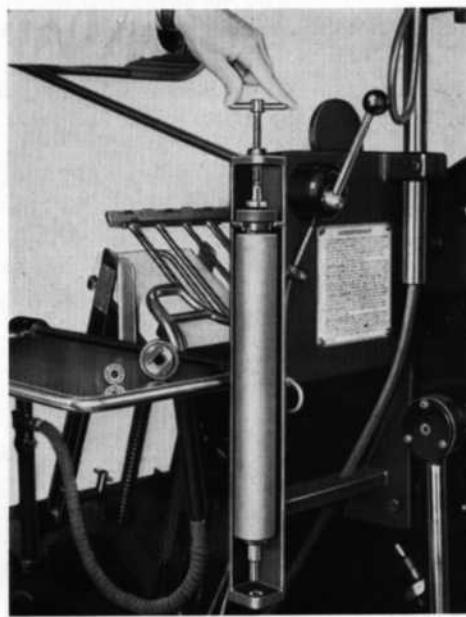
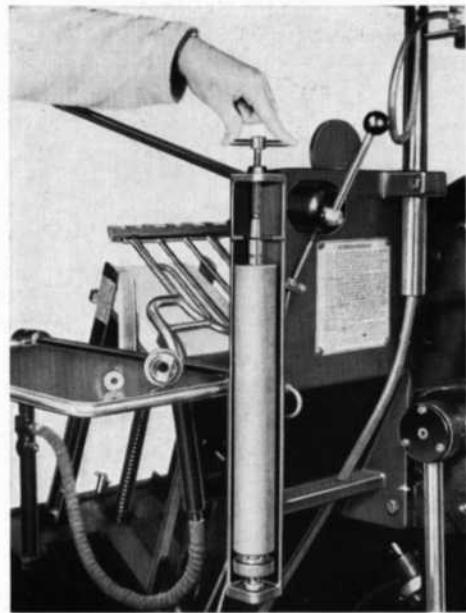
Should there be an excess of air blast, as when running at high speeds or on light stocks, the blast can be reduced by adjusting the release valve in the top of the pump cylinder counter-clockwise. The illustration to the left shows this operation. The pressman can note the amount of air escaping when the machine is running at the time of the adjustment. It is advisable to let a small portion of the blast escape at all times, especially at high speeds, as a more sensitive adjustment can be made on both the feed and delivery blasts.

### Device for Pressing and Removing Form Roller Bearings

Form roller ball bearings must be pressed on form roller journals before being placed in the machine. For this purpose, a bearing pressing device comes mounted on the machine. The illustration (upper) shows the location of this device, and the method for pressing the bearing on.

When fitting the bearing, first slip the roller truck on the journal by hand, taking care that the flat of the journal lines up with the flat portion of the truck. Next, slip the ball bearing on the end of the journal as far as is possible by hand, and place the roller in the lower hole of the device. The hand pressing screw is turned down until the center of the screw fits into the center of the roller journal. The bearing then can be pressed into position against the shoulder of the journal. Care should be taken that the bearing moves into position properly. The same procedure is followed for the other end of the roller.

The roller pressing device is designed to remove the roller bearings as well. Periodically, the bearings must be removed and thoroughly cleaned. To do this, the roller is again placed in the device, but with the roller truck resting on the flange in the upper part of the device. This is shown in the second illustration, and once more the hand pressing screw is run into the center of the roller journal. The bearing and truck are pressed off together. The roller is turned over and the bearing on the opposite journal pressed off in the same manner.





## Lubricating Form Roller Ball Bearings

Form roller ball bearings should be kept clean and lubricated with the recommended grease. Do not over-lubricate. Roller tracks must always be kept free of grease and dirt.

When removing the form rollers from the press—and this is necessary only when replacing the rollers or to grease the ball bearings—the lower form roller must be taken out first. Form rollers can remain in press at all times as they can be disengaged and washed in the press with the built-in roller washing device. All rubber rollers on the press are interchangeable. Their dimensions are:

Diameter	2"
Length	14 1/2"

## Setting the Roller Tracks

The roller tracks are provided with eccentric levers to adjust the contact-pressure of the form rollers against the form. The illustration shows the lock screw for the eccentric lever being loosened, and type-high gauge being used to check the roller track setting. With the lock screw loose, the lever can be moved to raise or lower the rollers. A graduated scale, attached above each eccentric lever, is used to show the direction and amount of adjustment. Raising the lever lowers the tracks and gives a heavier setting of the form rollers. Pressing the lever down moves the rollers away from the form and gives a lighter setting.

The best method of **setting** the form rollers is as follows: Turn the press by hand until the top form roller is directly over the top eccentric lever. While in this position, the top eccentric levers on both sides are set. When the adjustment has been completed, tighten the lock screws for the eccentric levers lightly. Now, turn the press over by hand until the top form roller is directly over the bottom eccentric levers. Make the settings, and tighten the lock screws lightly. Then turn the press over once more in order to recheck the settings of the top eccentric levers. If this setting has been maintained, the lock screws for the eccentric levers are tightened firmly. Remember that this adjustment moves the roller track and consequently sets both rollers. This eliminates necessity of setting the rollers individually.

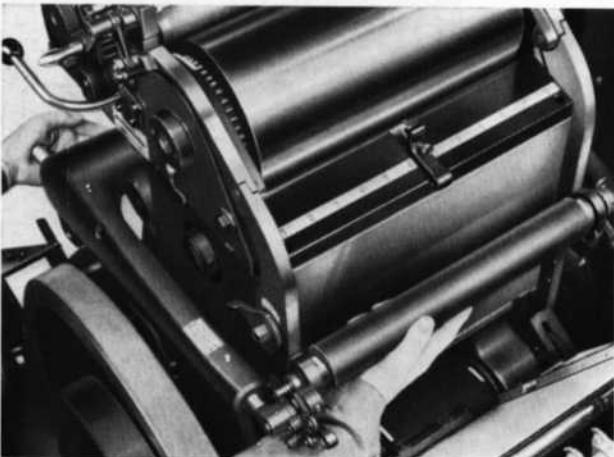
The most positive method for **checking** the setting of the roller tracks is to first ink the press as though running a job. Raise the roller by hand and let it come to rest on the type-high gauge. Raise the roller again, being careful not to smear the ink strip left on the type-high gauge. Measure the ink strip. The recommended width of the ink strip for normal forms is from 10 to 12 points.

Experienced pressmen will always give close attention to the setting of the form rollers. It affords better printing quality and extends the life of rollers. The Original Heidelberg is designed so the finest of the roller settings can be made and maintained. Rubber rollers, such as supplied with the machine, will give long satisfactory service if care is taken to set them properly and to keep the tracks and trucks clean and dry.

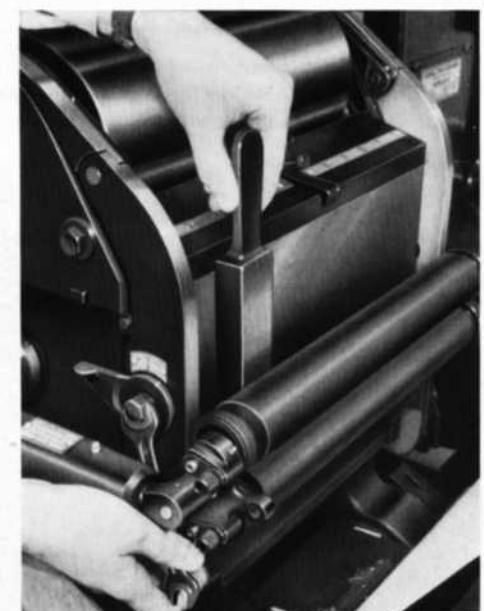
## Placing and Removing the Form Rollers

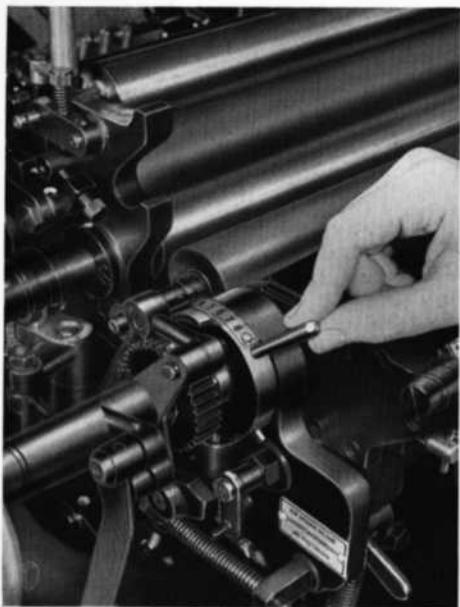
The ball bearings on the form roller journals should be packed with grease. Do not over-lubricate or the excess will get onto the roller tracks which must always be kept absolutely clean.

The rollers are always placed in the machine and taken out with the roller carriage in the center of the roller tracks. The upper form roller is always put in the machine first.



As shown in the illustration, the roller is put into the roller journal box on the pump side of the machine first. On the flywheel side, the rollers are put into place by pushing forward on the extended portion of the roller spring rod with the left hand. Be sure the roller lock is engaged. The lower roller is put on in the same manner.



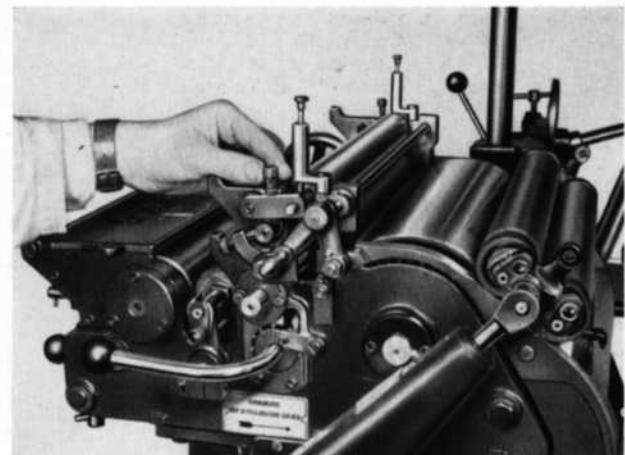


### Adjusting the Flow of Ink

The flow of ink, in addition to the setting by keys in the fountain is controlled by the distance the fountain roller turns with each impression. The illustration shows the lever used for changing the flow of ink from the fountain. The adjustment ranges from 0 to 8 teeth on the ratchet wheel, as shown on the scale. Each notch is equal to a  $1/4$  inch turn of the fountain roller. When the lever is on the "0" position, the ductor roller does not contact the fountain roller, and the flow of ink is stopped.

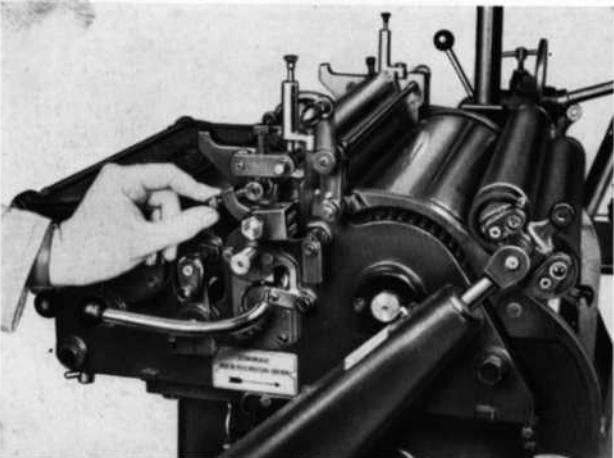
### Adjusting Upper Steel Distributor Roller

The upper steel distributing roller is then put into position over the rubber distributor roller. Illustration shows the adjusting screws for this roller. The same light setting mentioned before can also be made here. Tension can be checked by pulling a strip of tissue between the rollers while the spring loaded locks are in place.



### Setting the Distributor Rollers

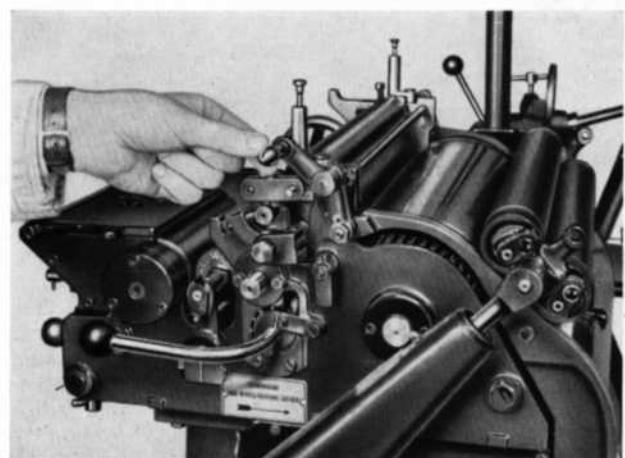
The rubber distributor roller can be placed or removed by lifting the spring loaded roller locks and swinging them out of the way. The steel distributor roller can then be raised and the rubber distributor roller placed in the journal boxes exposed.

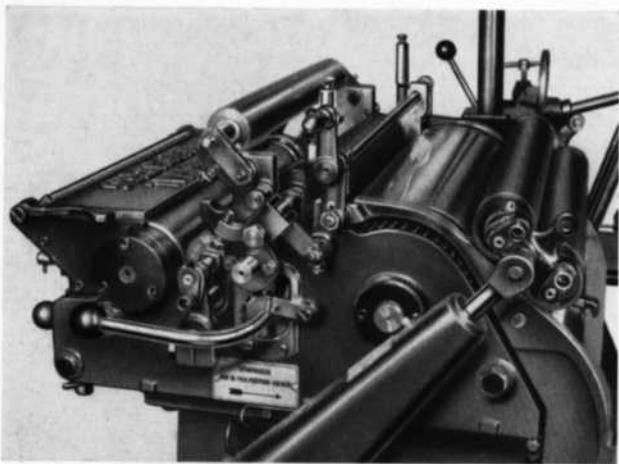


When placed in the machine, the rubber distributor roller sets itself. However, there are adjusting screws provided (see illustration) to set a light tension of the rubber distributor roller against the ink drum and the lower steel distributor roller.

### Raising Extension Roller Tracks

The two form rollers can be disengaged from the ink drum by raising the handle shown in the illustration. This device enables distribution of the ink without inking the form rollers. This makes it possible to have the form in the press without any worry of "filling up" the form during ink distribution. Combined with the washup device it is also possible to change colors or inks without lifting the form.

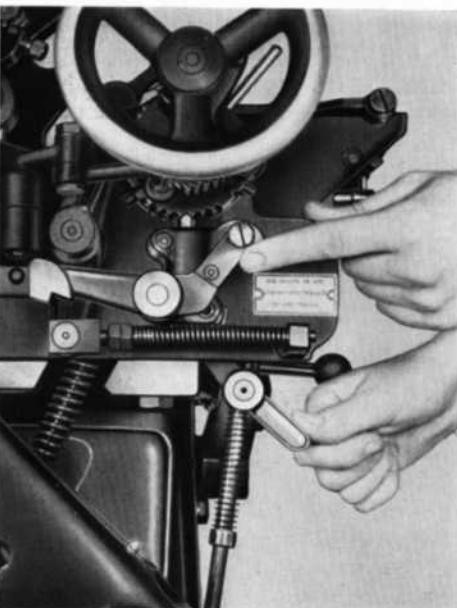




### Disengaging all Rollers

After washing up at the end of the day, the tension is taken off the distributing rollers. The illustration shows the upper steel distributor roller raised and the lifting latch for the rubber distributor roller engaged. With the press in position as illustrated and the fountain feed lever at "0", the ductor rubber

roller is also free. In this position, the form rollers are off the form and, by raising the extension roller tracks, are also off the ink drum. The press is ready to be left standing for any period of time.

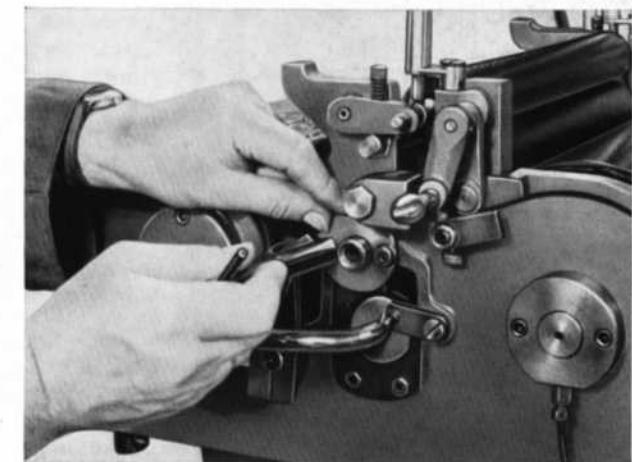
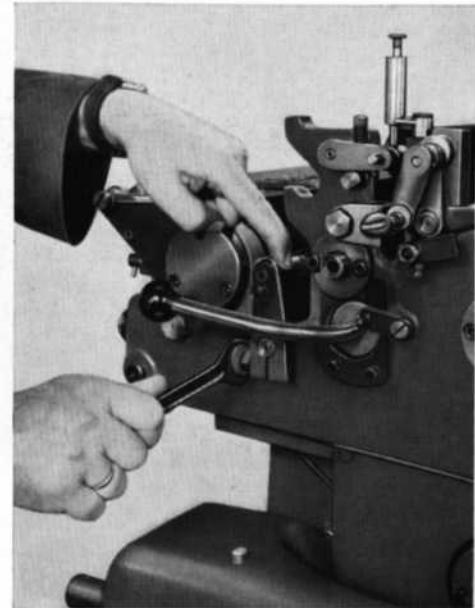


### Running Up Ink with the Fountain

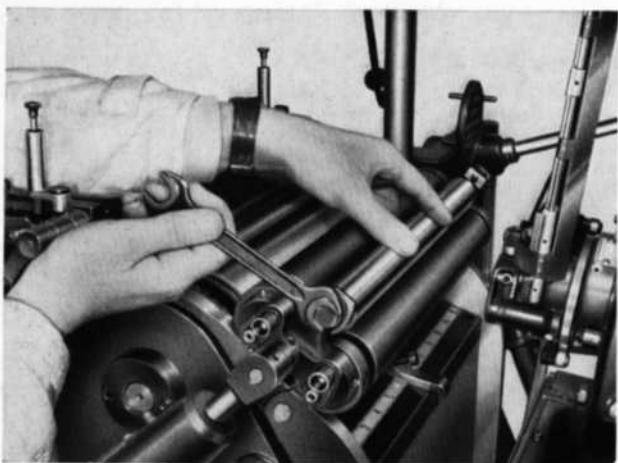
On the Original Heidelberg, the ink supply is automatically stopped when impression is off. As shown in the illustration, the ink may be run up with the fountain. The spring loaded lever is pressed down and the small catch engaged to hold the lever down. The ductor will now transfer ink with the press running off impression. When impression is put on, the small catch is automatically disengaged and the ductor movement returns to normal. When running up ink, pull knob labeled "Pull to Trip Suction" and raise extension roller tracks.

### Setting the Ductor Roller

If the ductor roller is not parallel with either the fountain roller or the lower steel distributor roller, the following adjustment must be made: First release fountain trip (see Page 88) and set ink flow control ratchet to a feed position. Turn press by hand until the ductor roller touches the fountain roller. As shown in the illustration, the ductor roller lever on the flywheel side can be loosened, and the ductor roller brought parallel with the fountain roller. Retighten the bolt. Check the adjustment by pulling a strip of paper between the rollers to see that the tension is equal on both ends.



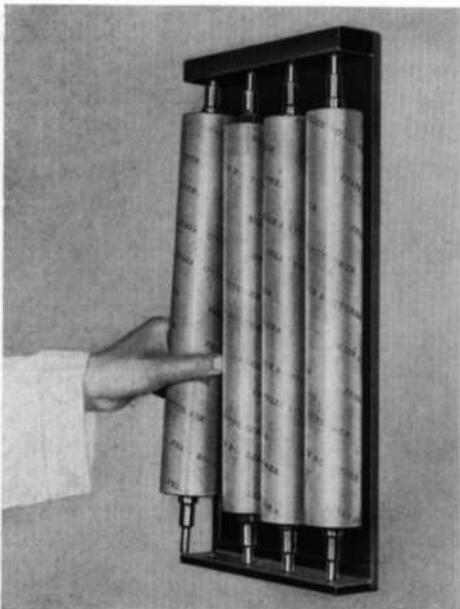
After the ductor roller has been set to the fountain roller, the lower steel distributor roller must be set to the ductor roller. Turn the machine over by hand until the ductor roller moves forward and contacts the lower steel distributor roller. As shown in the illustration, the bushing of the steel distributor can be moved by loosening the two small bolts. Move the steel distributor parallel with the ductor roller, and retighten the bolts. Again, check the adjustment by pulling a strip of paper between the rollers at each end.



### Positioning the Rider Roller

The rider roller is not intended to distribute the ink, but to store ink where a "ghost" is likely. It is normally used on just such forms. The illustration shows the rider roller being put into place. This is best done with the form rollers on the ink drum. Before

placing the rider roller between the two form rollers, it is recommended that the press first be inked up. When the bolts are tightened, press rider roller **lightly** against form rollers. When removing the rider roller, it is also recommended that you remove the bolts and clamping nuts from press.

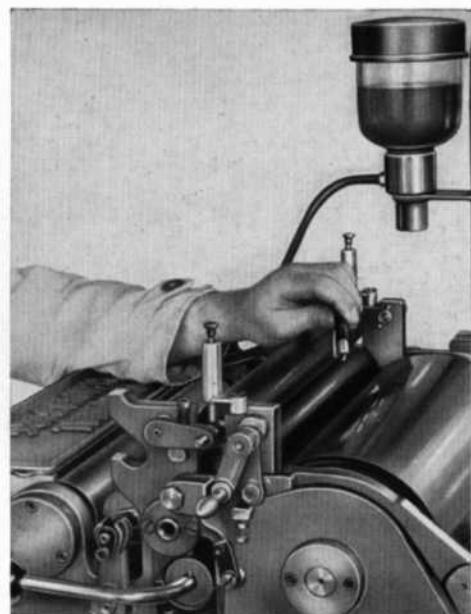


### Roller Rack

A roller rack for storing a second set of rollers can be procured through your local Heidelberg dealer. It should be mounted in a location out of the sun. A set of rollers that is not in use should occasionally be coated with a light film of oil.

### Washup Device

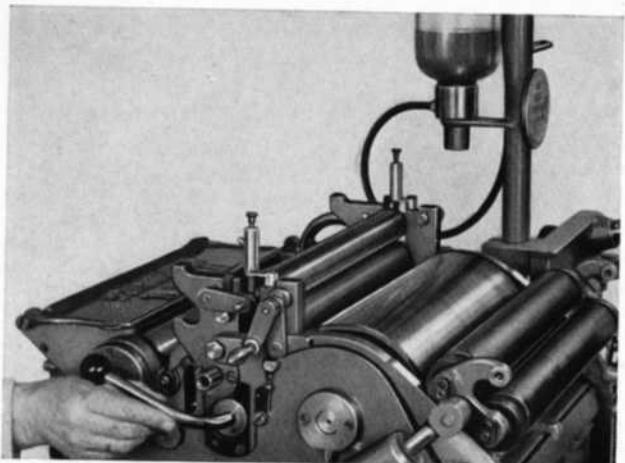
The built-in washup device makes it possible to clean the ink drum plus the rollers and form without removing them. Start the machine and run at a low to moderate speed to prevent the fluid from being thrown off the rollers. As in the illustration, stand behind the machine and, with the tube from the fluid container in the left hand, allow a small stream of fluid to flow over the length of the steel vibrator roller. The fluid flows by gravity and is controlled with the index finger over the nozzle of the tube.



### Washup Blade

Just as soon as the fluid has been applied to the length of the vibrator, the safety catch for the washup blade is raised as shown in the center of illustration. The black balled handle shown in bottom photo is then lifted. This puts the washup blade against the ink drum to take off ink and sludge and deposit it into the sludge basin. It will be necessary to apply fluid to the roller several times for a good washup. Keep an even pressure on the ball handle throughout the washup. The entire process takes about 60 seconds. When completed, lower the handle and lock the safety catch. It is not necessary to empty the sludge basin until the end of the day, but to insure subsequent clean washups, the blade should be wiped off with a rag after each washup.

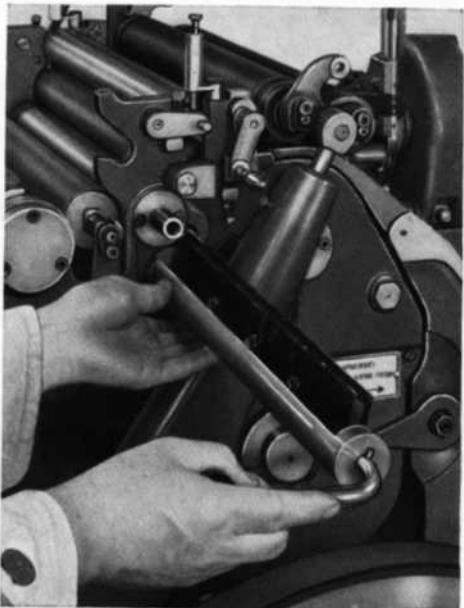




careless pressmen will allow the basin to stand for long periods to become filled and overflow. Removal of the washup device should never be attempted while press is running.

### Cleaning the Sludge Basin

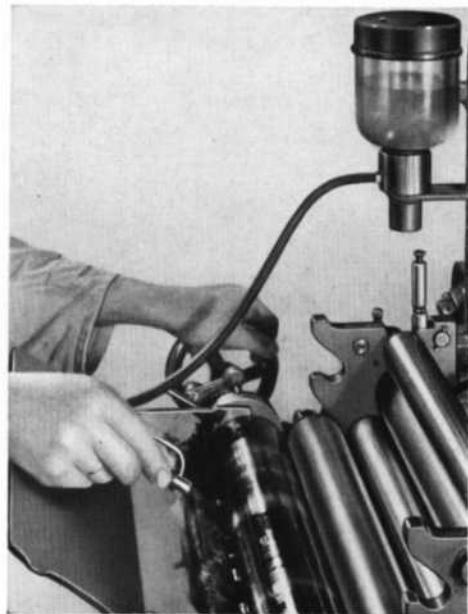
The washup device may be used several times before it is necessary to empty the sludgebasin. However, we strongly advise that this be done at the end of each day. Only



To remove the sludge basin, raise the safety catch and take the basin out as shown in the illustration. It is then emptied, rinsed with clean fluid and wiped dry with a rag before being replaced in the machine. A thorough cleaning of the sludge basin should be made once a month. To do this, only loosen the five bolts which hold the rubber blade and remove the blade. When replacing the blade, make certain that it is well seated before tightening the bolts.

### Washing the Fountain

The fountain is easily cleaned. When the bulk of the ink has been removed, a small amount of washup fluid is run in the fountain, as shown in the illustration. The fountain roller is turned to loosen the ink, and the surplus is wiped out.



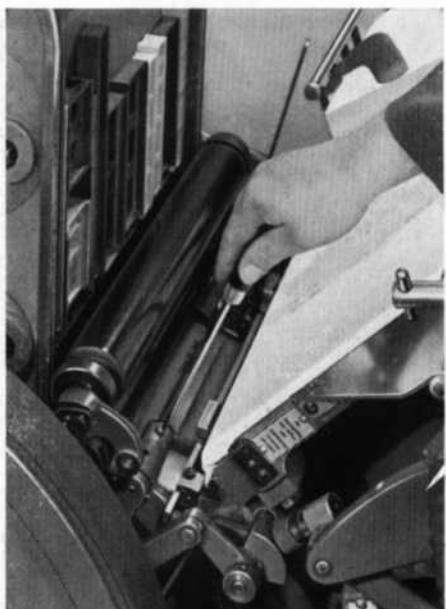
The fountain blade is lowered, and then can be cleaned with a rag, as shown.





### Lowering the Fountain Blade

To lower the ink fountain blade, the thumb screw shown in the illustration is loosened and swung from under the fountain. It is now possible to lower the ink fountain blade for cleaning. After cleaning, the ink fountain blade is returned to its normal position, and the thumb screw tightened snugly.



### Positioning the Frisket Fingers

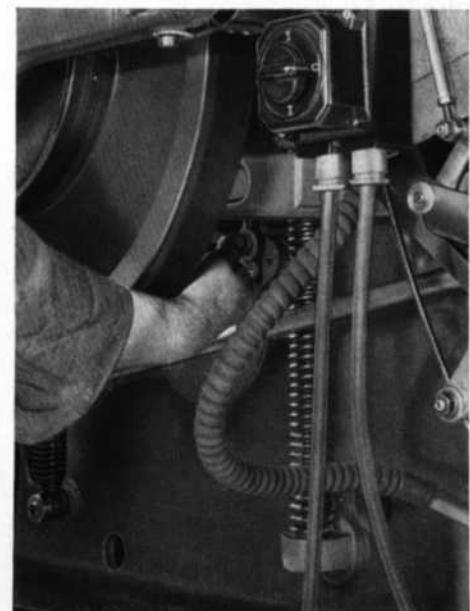
Frisket fingers may be used to maintain a flatter sheet and prevent tail slurs, or to frisket out the plunger when using numbering machines. The illustration shows the bar that holds the frisket fingers being inserted in the bracket that holds it. When inserting the bar, be sure that the pin in the bar fits into the slot of the bracket, and that the screw being tightened in the illustration enters the hole provided in the frisket bar. (For 13 x 18 Original Heidelberg refer to Page 121.)

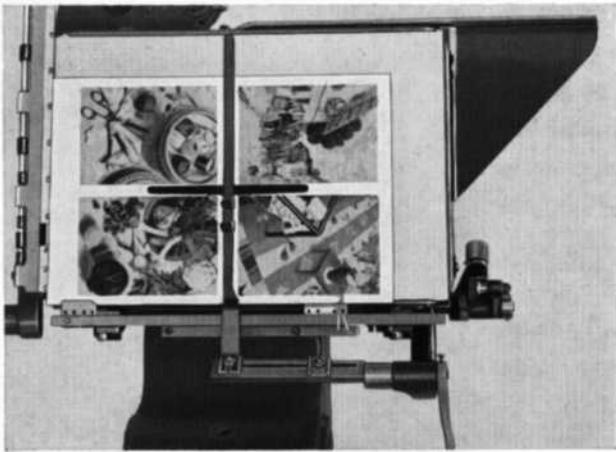
There are several styles of frisket fingers furnished with the machine, and the top illustration shows the proper method of attaching the selected frisket finger to the bar. For positioning the frisket finger in a free space in the form, it will be necessary to bring the frisket finger down to the platen, as is done in the illustration. To do so, the frisket operating lever must be disengaged.



### Lock for Frisket Fingers

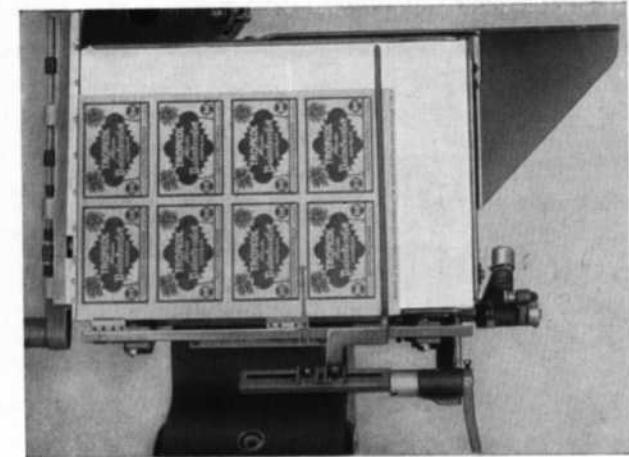
The bottom illustration shows the location of the locking knob for the frisket fingers. This knurled knob, found behind the lower front of the flywheel, must be pulled out, and the lever allowed to move to the rear of the machine. The frisket can now be brought down to the platen surface. After securing the desired position of the frisket finger, the press can be started and the frisket lever will lock automatically.





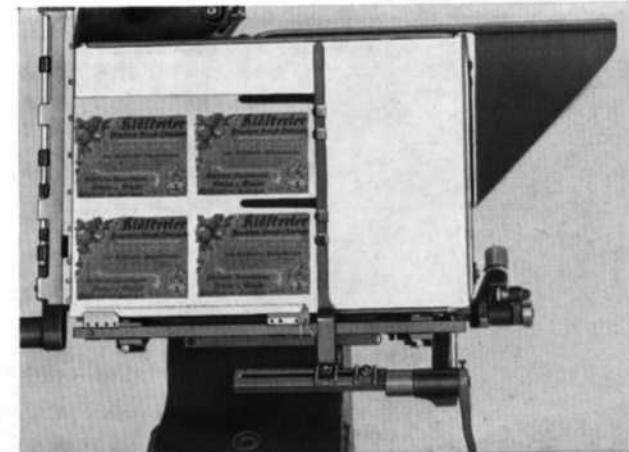
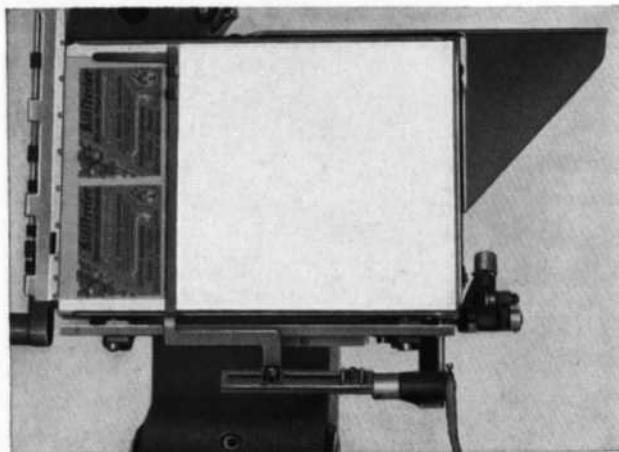
This illustration shows the use of the frisket finger with the double cross finger in the center of a large sheet. The serrations on the friskets fit those in the cross fingers, assuring positive position.

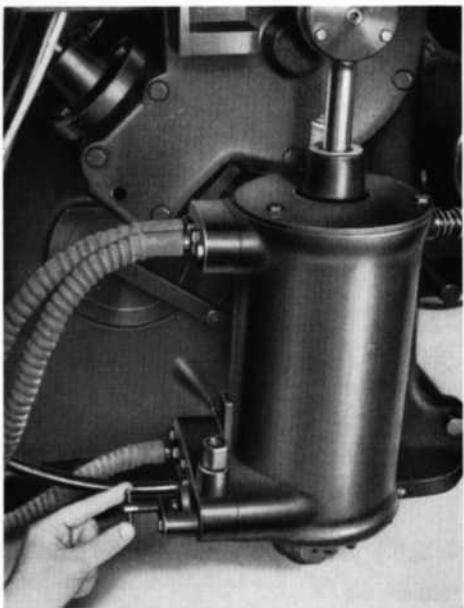
Another example for the use of the frisket with a single cross finger is shown in the lower illustration. Note that more than one frisket can be used on a sheet, as there are two holders provided on the frisket bar.



Here is an example of the narrow frisket being used on a long sheet. Note that when using guides, they must clear the friskets.

The straight frisket with two single cross fingers.





### Operating the Spray Gun

The valve shown in the illustration will turn the spray gun on or off. With the valve open, the air for the spray gun escapes, and with the valve closed, the gun operates.

The amount of spray given each sheet is regulated by means of the adjusting screw illustrated. Turning the screw counter-clockwise will increase the amount of spray coming through the gun. Turning the screw clockwise decreases the amount of spray. As this regulates the lift of the lever and the needle valve, the knurled lock nut for the spray adjustment must be tightened to maintain proper setting. Always try to get along with the least amount of spray.

Spraying does not set the ink quicker but merely prevents off-set. Care should be taken when checking or handling freshly printed sheets. It is advisable to run about 200 sheets and then check the bottom sheets for off-set. If the bottom sheets are offsetting despite careful handling, increase amount of spray slightly. It is also recommended to remove printed sheets from press in small lifts.

A careful makeready is important to prevent offset. Heavy impression on the back of the sheet tends to offset easier. Also, hold down the ink and use only short full-bodied inks.



### Adjusting the Spray Gun

Any type liquid non-offset spray solution may be used in the Heidelberg spray gun. The glass container for the spray gun is filled with the desired solution and placed in the upper position on the spray gun tube. The glass container is placed in the lower position when cleaning the gun, as the fluid is gravity fed.



### Positioning the Spray

On many jobs it may be desired to aim or direct the spray to one particular area of the sheet. The gun is mounted in such a way that it can be adjusted to any desired position. The gun itself can be tilted up or down in its bracket which can be swiveled to the right or left. Therefore, the spray can be directed to any part of the sheet.

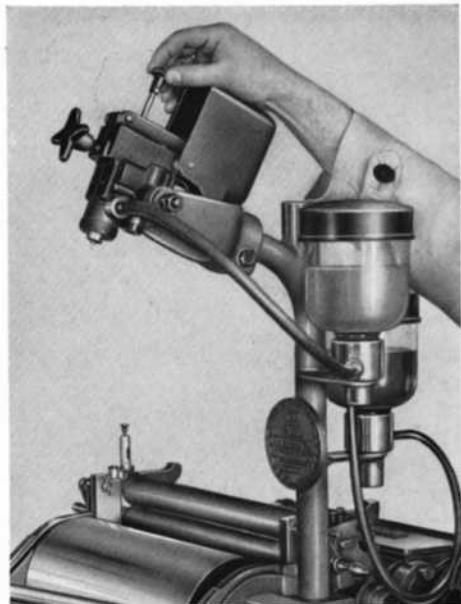
There are two types of spray caps furnished with the machine. One has only the round hole in the center and gives a spot spray effect. This cap will suffice for most of the jobs run on the machine. The other cap gives a fan-shaped spray and should be used only on large sheets and forms.

The illustration shows the procedure for changing the spray caps. The plastic ribbed cap is unscrewed and taken off, and this will allow the spray cap to be removed. When changing spray caps or making adjustments of any nature on the spraying apparatus, extreme care should be exercised. The plastic ribbed cap must be set snugly so that no air escapes when the selected spray cap has been replaced.

### Cleaning the Spray Gun

It is not necessary to clean the spray gun daily as long as it is going to be used again the following day. However, when the gun is not in use, it should first be cleared of fluid, and the parts cleaned to prevent clogging or gumming. The illustration shows the procedure for cleaning the spray gun. The glass container must be placed in the lower bracket to keep the fluid from running through the gun when the parts are removed. For best results, disconnect the fluid-carrying hose, run the press and blow out the remaining fluid. Open the spray adjustment all the way in order to blow fluid out quickly and completely. The press is then stopped and the star clamping nut loosened so the spray gun cover can be opened. The top illustration shows the cover open while the needle valve is being removed. Next raise the forked lever so the air plunger can be removed as shown in lower illustration.

Handle all spray gun parts with care so they are not damaged. After cleaning the metal parts, coat with a light film of oil. Assemble the gun in reverse order of dis-assembly. Since most spray fluids are water soluble, it is highly recommended that warm water be run through the spray gun periodically.



The spray needle has an adjustable head. The original correct setting is made at the factory and should not have to be adjusted again unless the spray gun should drip or fail to operate properly.

The tip of the spray needle is seated in the nozzle of the bottom of the gun. The amount the needle raises each time is controlled by the forked lever. There should be a clearance of 4 to 6 points between the head of the spray needle and the fork lever. If the spray gun drips or does not operate properly, this clearance should be checked and readjusted to the above-mentioned clearance. Simply lift the cover and take out spray needle. The round head of the spray needle is threaded and held in position by a small lock nut. Loosen lock nut, adjust head of spray needle accordingly and retighten lock nut. Replace spray needle and check that the amount of clearance is correct.



#### **Roller Track Air Blast**

In the lower part of the roller track on the pump side of the machine there are holes for the air blast. This blast aids in stripping the sheet from the form and helps control the tail of the sheet for delivery. These holes, shown in the illustration, should be cleaned from time to time and blown free of particles.

It is possible to gain more blast through the roller track by decreasing both feed and delivery blast and closing the outlet valve on the pump.

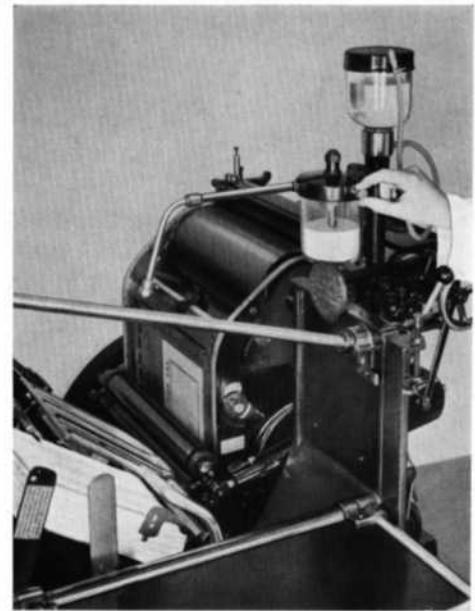
#### **Using the Heidelberg Anti-Offset Powder Spray Gun**

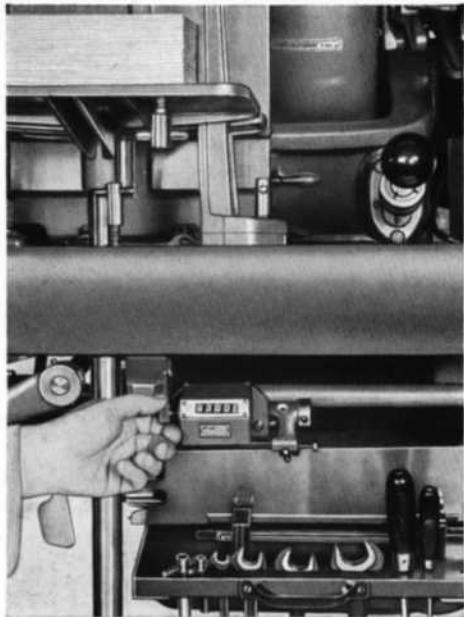
Since only a small amount of air blast is necessary for powder spraying, the valve on the air pump (see page 98) should be opened according to the speed of the machine. This open valve also serves to blow away oil which lubricates the pump and prevents it from entering the tube connecting the pump with the spray gun. A valve to adjust the amount of powder spray is located on the side of the spray gun cover.

It is important that freshly printed sheets receive as little powder as possible. The powder spray should be hardly visible against a dark background (black sheet).

Never fill the powder container to the brim.

Be certain that both jet pipes and the holes therein are cleaned regularly with a brush. Before the extension pipe is pushed in again, grease it slightly on the outside. Remember that powder dust which settles on the machine absorbs oil and reduces lubricating efficiency. Therefore, it is extremely important that all open lubrication points be cleaned and oiled daily.





### Counter

The counter for registering number of impressions is on the front of the machine beneath the main table base. At the start of the run, the counter is set on "0" as shown. The counter registers only when the impression is on.

If the counter fails to register, it is necessary to readjust the rod which operates the counter. To make the adjustment, proceed as follows:

Turn the press over by hand until it is on the dead center of impression. Impression lever must be on and set so the impression adjustment is on "0". Loosen the small hexagon bolt that holds the rod in the counter lever. Push the rod back against the base of the platen, hold there, and adjust the counter lever so it just trips the counter, then retighten bolt. Care must be taken to see that the rod is adjusted correctly and does not jam the counter when the impression is increased.

### Adjusting the Clutch

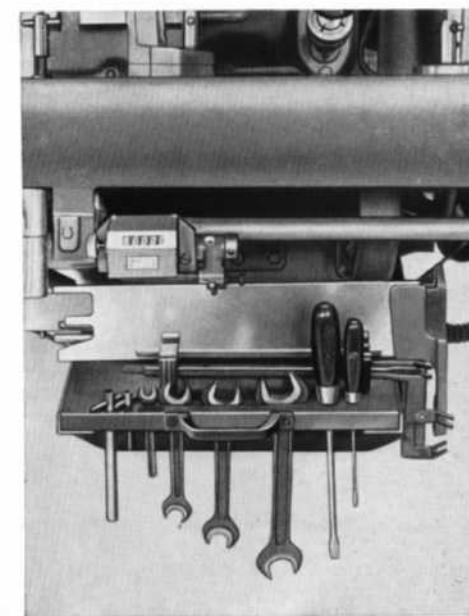
The Heidelberg clutch is a metal-to-metal expansion type clutch. An adjustment might be necessary after a long period of operation. As shown in the illustration, the lock nut for the adjusting screw is loosened with a wrench and the adjusting screw turned with a screw driver. About a  $\frac{1}{4}$  turn clockwise should be sufficient. If the clutch is adjusted too tight, it will drag and keep the press from stopping as it should. Be sure to hold the adjusting screw while retightening the lock nut so the adjustment is not lost. The corresponding adjustment screw must be turned the same distance. To do this, engage the starting lever, turn flywheel a half revolution and the opposite screw will be in position for adjustment.

When the clutch is in need of adjustment, you will usually notice a variation in speed or a hesitation of the press when the clutch lever is engaged.



### Tool Rack

The illustration shows the tool rack provided for tools and small accessories. In order to have your tools handy at all times and to prevent losses, always return the items to their proper places.



## Overload Safety Device

The Original Heidelberg 10 x 15 is equipped with a safety shearing collar to prevent costly damage to the press if maximum impression of the press is ever exceeded.

Whenever the collar is sheared by excessive pressure, the impression is released.

Over long periods of operation, the safety collar may fracture and partially shear, even though maximum impressional strength has never been exceeded. The first indication of a fractured or partially sheared safety collar is the additional turns of the impression adjustment required to bring up the impression on a normal form.

Also the center bolt in the end disk will have developed a slight amount of end play. In either event the shear collar needs replacing. Replacement of a sheared collar is quite simple and takes only a few minutes. Proceed as follows:

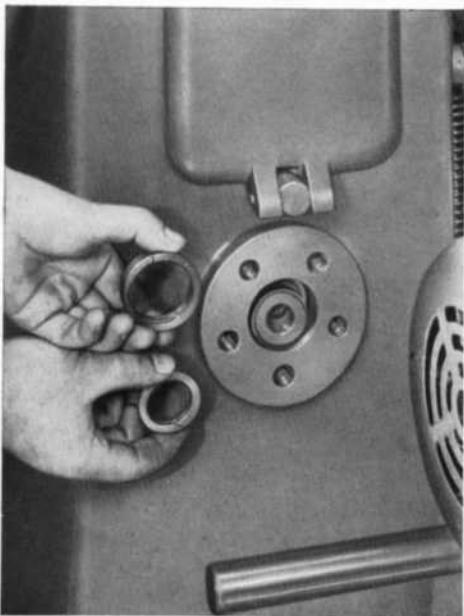
(Explanation of the 13 x 18" Safety Device, See Page 123.)

As shown in the illustration, remove the six hexagon bolts at the rear of the press.



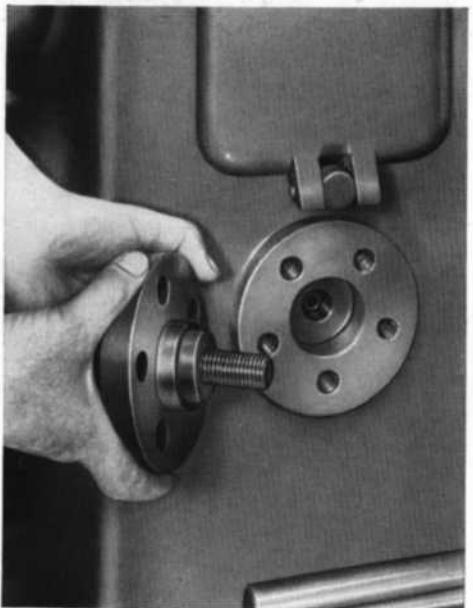
Then take off the round steel plate and remove the broken shearing collar, as shown in bottom illustration.





The illustration shows the broken shearing collar in two pieces.

Two spare shearing collars are supplied with each new press. When replacing the sheared collar, first insert the center bolt into the steel plate as illustrated. Slip the new shearing collar over the bolt inside the plate and then the spacing washer.



To complete the reassembly, insert the center bolt first so the holes for the other bolts can be lined up easily. After the five outside bolts have been inserted and tightened lightly, tighten the center bolt. Remove one of the 5 outer bolts and put on the center bolt locking plate. Then tighten the 5 outside bolts evenly and firmly.

### Backing up the Press (For emergencies only)

Due to a mis-feeding incident or an accident, the press may become stuck on impression. In such a case, the impression lever cannot be released and it becomes necessary to reverse the machine slightly in order to release the impression and free the machine. Located behind the flywheel and adjacent shaft is a safety disk painted white for easy identification. The normal function of this disk is to prevent the press from being turned in reverse. However, by lifting the disk slightly with a screwdriver and with the clutch engaged, the machine can be turned in reverse direction.



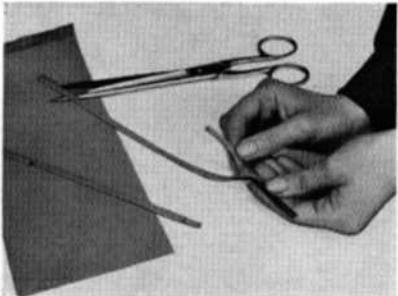
**By no means should the flywheel be turned in reverse direction more than enough to release the impression throw-off lever.**

Should damage be incurred as a result of an accident, or by improperly releasing the impression, a qualified mechanic should be called to make the necessary repairs.

On the 10x15" Original Heidelberg Platen, an alternate method of releasing the impression is to loosen the 5 outer bolts of the shear collar disk, as illustrated on the two preceding pages. It is only necessary to loosen the 5 bolts to a point where the impression lever can be thrown off.

## Replacing Rubber Strips in 10 x 15 and 13 x 18 Original Heidelberg Grippers

The rotating grippers on Heidelberg Platens are provided with a rubber strip vulcanized to the lower portion of each gripper. This rubber acts as a pad and insures a firm and even gripper bite for all types of stock. After several years of operation, particularly when rough stock has been run, the rubber becomes worn. For those pressmen who have the desire and "do it yourself" capabilities, we suggest the following procedure for replacing the rubber pads.



### Material required:

1. Sheet rubber of approximately .012" in thickness, such as the rubber blanket material in the packing sample at the rear of the manual. (Do not use a rubberized fabric material.)
2. Double-sided plate mounting adhesive of a good quality.

Strip off one side of a sheet of double-sided adhesive of sufficient width and length and apply it to the rubber sheet of approximately the same size. Cut the sheet into the required number of strips,  $\frac{5}{16}$ " in width. Remove the remaining protective covering and apply the rubber strip to the lower portion of the gripper.

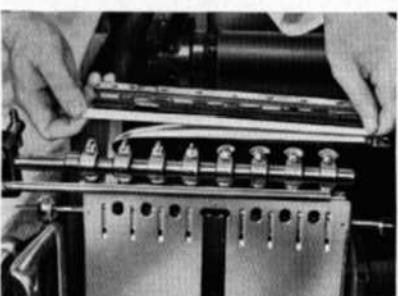
In certain situations, the rubber can become worn unevenly or in spots. In such cases, it is important that the existing rubber be removed or levelled as much as possible. This can be accomplished with a razor blade and medium grade sandpaper. Furthermore, it is extremely important that the gripper surface be free of oil and dirt before applying the rubber strip.

Illustration 1 shows the protective layer being removed from the adhesive.

Illustration 2 shows the rubber strip with adhesive being applied to the lower portion of the gripper and pressed down.

Illustration 3 shows cutting away the rubber at the side guide opening in the gripper.

After replacing the rubber strips, gasoline or similar solvents, should not be used for subsequent cleaning of the grippers.



## Special Adjustments

on the

**ORIGINAL HEIDELBERG**

**13 x 18"**

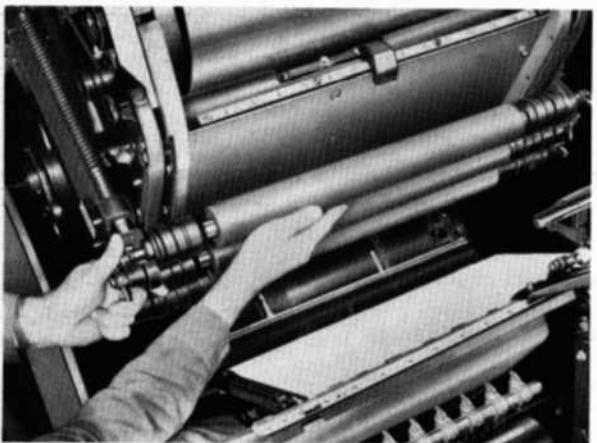
## INDEX FOR ADJUSTMENTS

### 13 x 18 ORIGINAL HEIDELBERG

which differ from

### 10 x 15 ORIGINAL HEIDELBERG Adjustments

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### Placing and Removing Form Rollers (13 x 18)

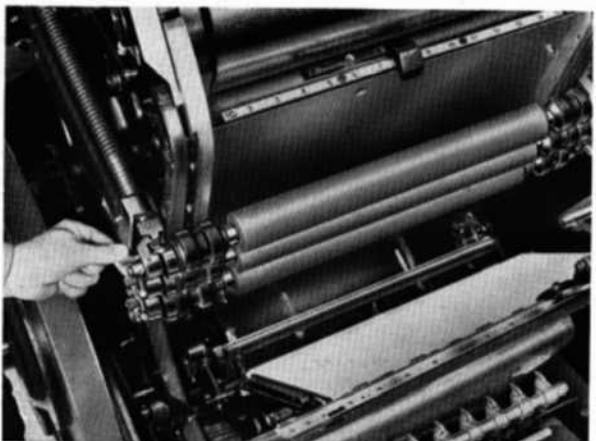
It is best to place and remove form rollers with the roller carriage arms in the center of the roller tracks. Be sure that ball bearings have been put on the journals in the same manner as prescribed for the 10 x 15 Heidelberg. Care and lubrication of ball bearings is also the same.

As shown in the illustration, the rollers are put in from the flywheel side of the press. The lowest roller must be put in first, starting with the journal on the pump side. The journal box on the flywheel side is pulled out, and the roller inserted.

There are 3 safety catches which must be pulled out before the rollers can be placed (see illustration). They must be re-engaged before the press is run.

Light forms can be printed on the 13 x 18 with just the two bottom form rollers.

When running the press minus any rollers, be sure the journal boxes are in their normal position and not turned. When not in use, you will notice that the roller arms keep them from turning.



When re-covering, specify the following:

Diameter 2", Length 17 $\frac{7}{8}$ ".

Roller tracks and trucks should always be kept clean and dry.

### Lubricating Form Roller Ball Bearings

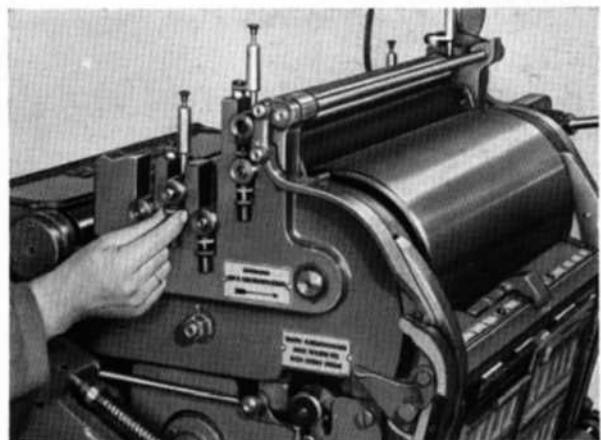
The ball bearings on the form roller journals should be packed with grease. Do not over-lubricate or the excess will get onto the roller tracks which must always be kept absolutely clean.

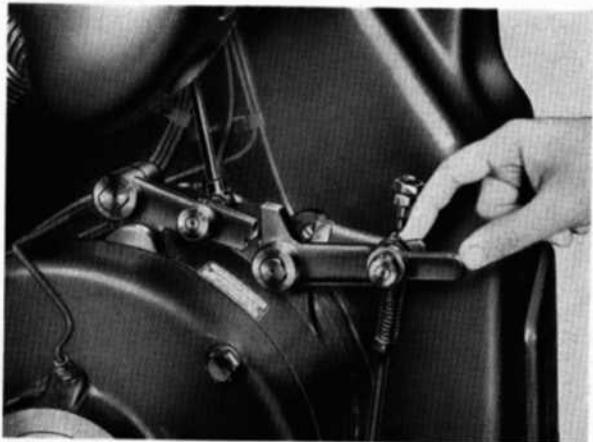


### Adjusting the Distributor Rollers (13 x 18)

The distributing rollers can be adjusted simply and without the use of tools. As shown in the illustration, each of the distributing rollers is adjusted on each end by the knurled screws.

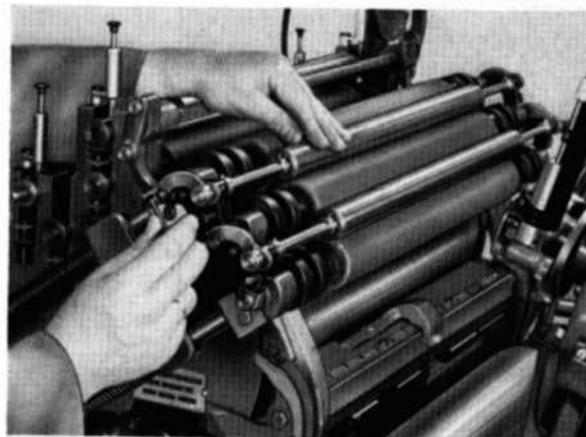
Each also has a lock nut so the setting can be maintained once it has been made. A light setting is all that is necessary on the distributing rollers. Check the adjustment by pulling a strip of paper between the rollers to see that tension is even on both ends.





### Running Up the Ink (13 x 18)

As on the 10 x 15 Original Heidelberg, the ductor roller is held away from the fountain and stops feeding ink when the impression is thrown off. When "running up" ink with the impression off, the lever seen in the illustration is pressed down with the thumb, and the latch located behind it is placed in front of the stop. When the press is put on impression again, the latch disengages automatically, and the ductor operates normally.



### Placing the Rider Rollers (13 x 18)

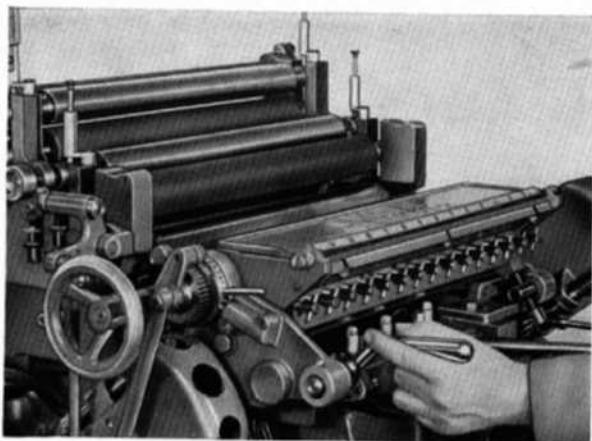
The purpose of the rider rollers is not to distribute the ink, but to store ink for jobs where "ghosting" is likely. The rider rollers are of no advantage on ordinary forms. To put on the rider rollers, turn the press over until the rollers are on the ink drum. Before placing the rider rollers, it is advisable to ink up the press. The lower rider is put on first, and the sockets of the rider fit over the pins provided on the lower and middle form roller brackets. With a slight, even, over-all pressure on the two rollers, the rider is tightened with the small socket wrench as shown in the illustration on both sides. The spring loaded safety catch for the rider is then inserted.

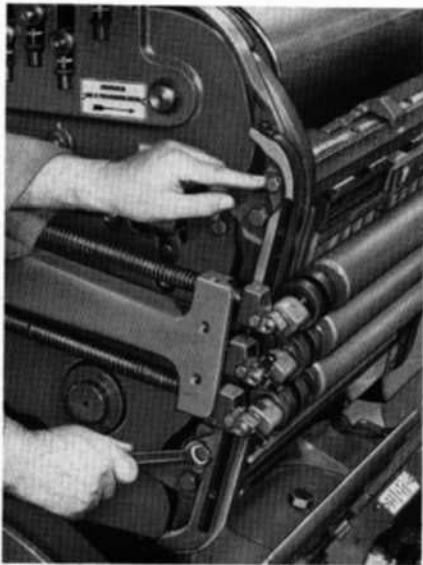
The same is done with the other rider, and it is placed between the upper and middle form rollers. Both rider rollers are identical and may be used in either position.

Rubber rollers as supplied with the machine shrink or swell the least of any available type of roller and then only under adverse conditions. When rollers that do shrink or swell are used, the setting of the rider rollers must be checked and adjusted every half hour as a breakage may result from too much pressure of a swollen roller.

### Disengaging the Distributor Rollers (13 x 18)

All rubber and steel distributing rollers can be disengaged by simply raising the chrome lever shown in the illustration. Therefore it is not necessary to remove the rollers at night or for removing surplus ink. The lever for disengaging the form rollers from the large inking cylinder is similar to the one on the 10 x 15 Original Heidelberg. Due to the fact that all rollers are washed with the wash-up device, the rollers need to be removed only for replacement or greasing the ball bearings on the form rollers.





### Adjusting the Friction Form Roller Tracks (13 x 18)

Setting the form rollers on the 13 x 18 is done in the same manner as on the 10 x 15. The purpose of the friction roller track is to prevent the rollers from slipping. These friction tracks are attached to the roller tracks and are automatically adjusted when the form rollers are set. They are set just a fraction higher than the form roller tracks. After a period of time, it may be necessary to readjust the friction tracks. When worn, they do not touch and fail to serve their purpose. If set too heavy, they will bear too much weight and wear out prematurely.

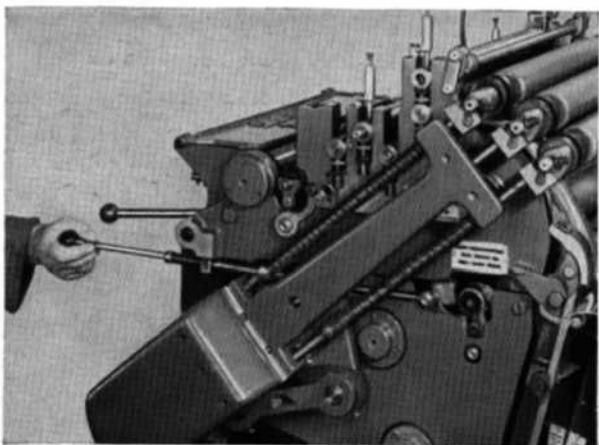
When re-setting is necessary, turn the press over until the rollers are in the center of the tracks. The friction tracks are attached to the roller tracks with 3 hexagon bolts. Two bolts can be seen in the illustration, while the third is hidden from view by the roller carriage arm. Loosen the three bolts and bring the friction track out evenly against the three roller tracks with the proper tension. Check tension with a strip of paper.

Retighten the bolts and set the other friction track in the same manner. The height of the rollers can be changed by means of the roller tracks without disturbing the setting of the friction tracks as both move together.

### Washup (13 x 18)

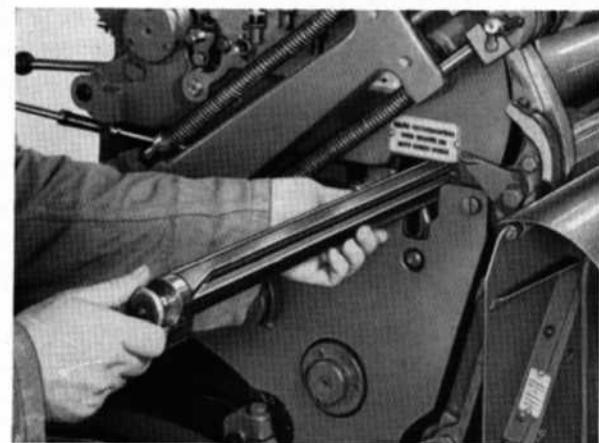
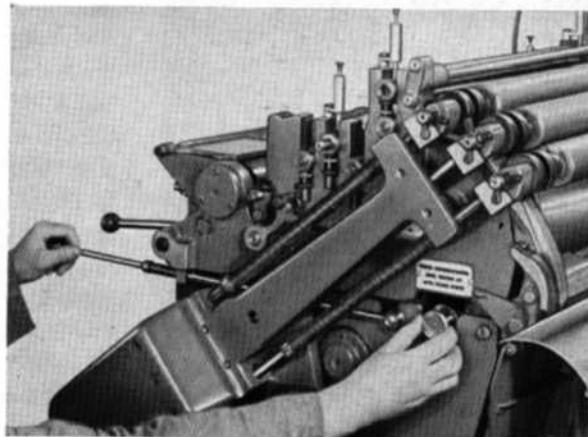
The washup device is the same as on the 10 x 15 Original Heidelberg with these exceptions: The handle for washup is in a different location, and the sludge basin is farther forward on the machine. See the bottom illustration.

To prolong the life of the rubber blade, it should be wiped clean after every washup and the sludge basin emptied and thoroughly cleaned at the end of each day.



### Removing Sludge Basin (13 x 18)

The sludge basin cannot be taken out when press is running. Removal of the sludge basin is shown in the illustration. The red safety latch is raised, the red handle is slightly pressed forward, and the basin taken out from the flywheel side. This is done at the end of the day. The lower illustration shows the basin being replaced. Be sure to lock the red safety latch after replacing basin.





### **Regulating Impression (13 x 18)**

The amount of impression is regulated by the position of the impression lever stop. A scale on the bracket for the impression lever stop shows the position or the amount of change. When the pointer of the stop is on "0", the amount of impression is minimum. It is best to start with the impression at this point and add impression as needed. This cannot be done when the machine is running. The illustration shows the stop being changed by loosening its clamping bolt with the large "T" handle socket wrench.



### **Throwing Impression "On" and "Off" (13 x 18)**

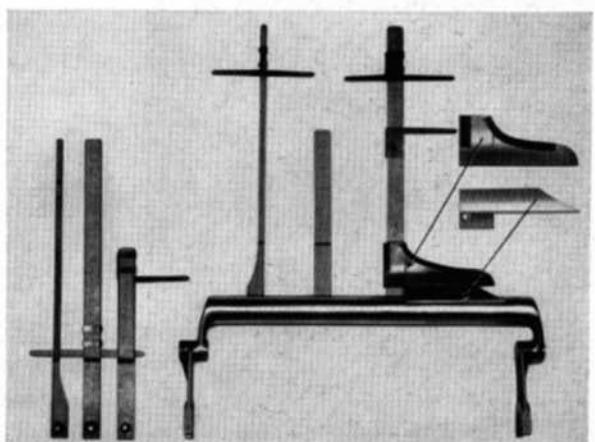
The impression lever of the machine is thrown on by raising the handle shown in the illustration. To take the machine off impression, the handle is merely pushed down.

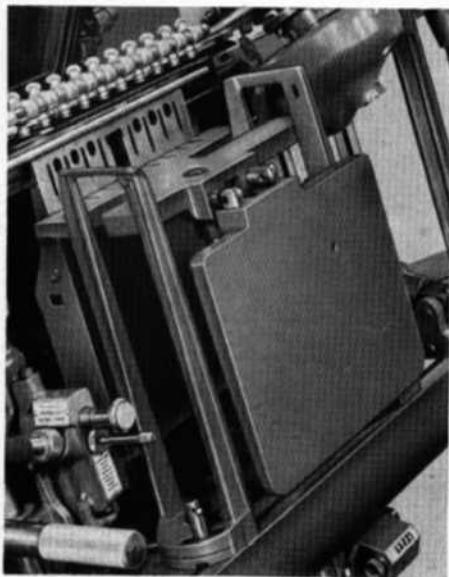
### **Printing with Guides**

Only brass guides are furnished with the Original Heidelberg 13 x 18" as standard equipment. Consequently there is only one guide stop position for the left-hand feed standard. If, however, nickel guides are desired, a special accessory group GT 79, is available.

### **Frisket Fingers (13 x 18)**

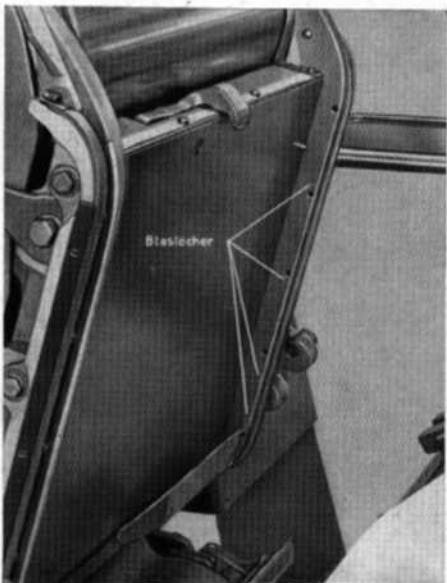
The frisket fingers for the 13 x 18 do not lock and can be brought down to the platen at any time. The two illustrations show a frisket finger being placed on the press, and the various types of frisket fingers furnished with the press. There are two chrome guards for the frisket fingers, and their purpose is to prevent the sheet from nicking against the friskets. Either can be used next to any frisket, while one of the cardboard slides should be used over the frisket and chrome guard to make the combination more successful. This is shown in the illustration. The frisket fingers are serrated on both sides and fit those in the cross fingers, assuring positive position. When printing with guides, the frisket fingers must clear the guides to prevent damage to them.





### Drop Feed Table (13 x 18)

The rear half of the feed table can be lowered as shown in the illustration. This makes the platen more accessible for packing and makeready. To do this, the rear portion of the table is pulled to the rear and let down. To return the table to the normal position, simply raise the rear portion. The table is spring loaded to set itself.

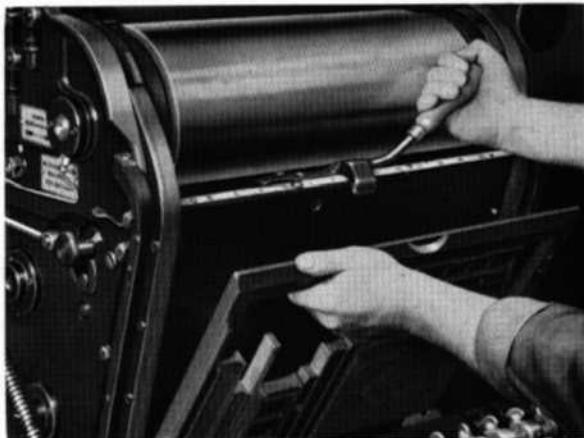


### Roller Track Blast (13 x 18)

Blast holes are shown in the roller track on the pump side of the machine. These holes are for the same purpose as on the 10 x 15 and must be cared for in the same manner. There are 4 holes on the inside and 4 holes on the surface of the roller track.

### Chase Catch

The chase catch on the Original Heidelberg 13 x 18 differs slightly from that of the 10 x 15. The chase is released by lifting the latch with the pin wrench supplied with the machine.

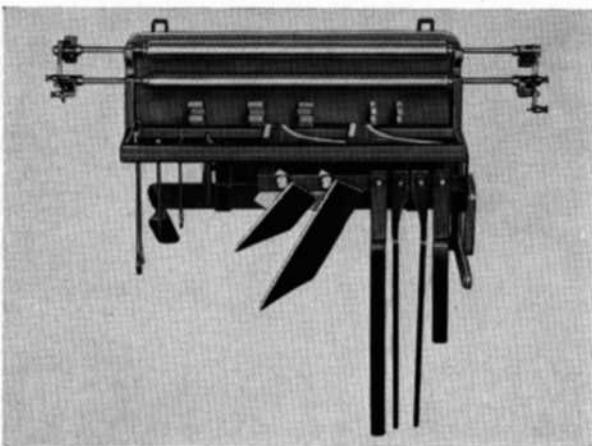


### Overload Safety Device (13 x 18)

Like the Original Heidelberg 10 x 15, this machine also has a safety device against overload. On the 13 x 18, this device is in the form of a shearing pin instead of a shearing collar. The pin serves the same purpose however, and the illustration shows a new pin being installed.



Should maximum impression be exceeded, the pin will shear. The press must be shut off immediately, and it will be noted that the lever for the impression eccentric is back against the stop. The hexagon set screw holding the shearing pin is removed and the broken parts of the pin taken out. When the new pin is put in, care must be taken that the potted hole for the set screw in the pin (shown in the illustration) is lined up in such a way that the set screw fits into it. The set screw is then retightened.



### Tools and Accessories (13 x 18)

The illustration shows the tool and accessory rack for the 13 x 18 Original Heidelberg. The rack should be mounted on a wall near the machine. The following tools are used most frequently and should be kept in the holes located on the right side of the press table base:

- 1 bar with handle for raising chase latch
- 1 large screw driver
- 1 small screw driver
- 1 "T" handle socket wrench for adjusting impression.

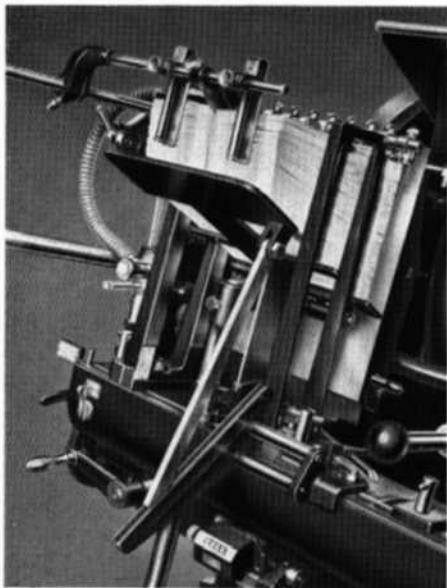
Small tools and accessories are kept on the rack or in the drawer.

### Extra Accessories

On the following pages, you will find listed those extra accessories which are available for Original Heidelberg Platen Presses. These are very helpful to those shops producing special types of jobs.

Should you be interested in procuring any of these extra accessories, we suggest that you contact your Heidelberg dealer for price and delivery time.

With a few exceptions (as noted under illustrations), extra accessories shown are available for both 10 x 15 and 13 x 18 Original Heidelberg.



Group 32

**Tilting Feed Table Device** for printing paper bags that pile up unequally on one end. This device is designed for printing two-up.

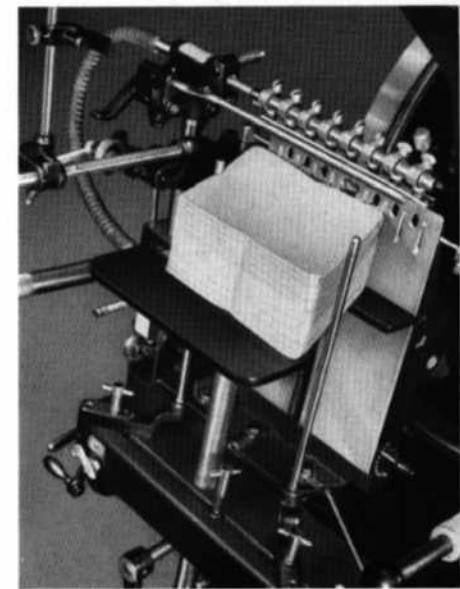


Group 45

**Tilting Feed Table** for printing paper bags which pile up unequally on two sides. This device is designed for two-up printing. The feed table can be tilted sideways. Available for 10×15 Original Heidelberg's only.

Group 36

Device for printing open cut-out envelopes **without guides**.



Group 33

**Device for printing small sizes three- and four-up** (tags, bags, etc.)

Three-up

Four-up

Minimum length (Approx.)

10×15

2 $\frac{1}{2}$ " to 3 $\frac{3}{8}$ " width

1 $\frac{3}{16}$ " to 2 $\frac{1}{2}$ " width

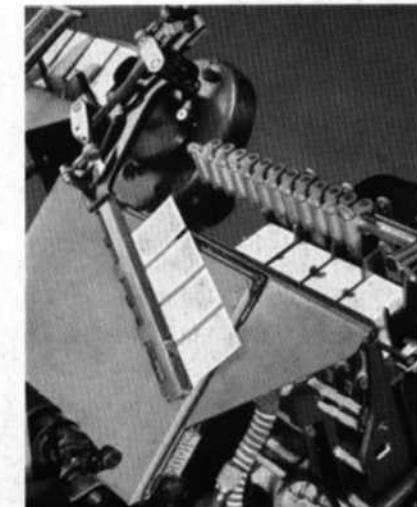
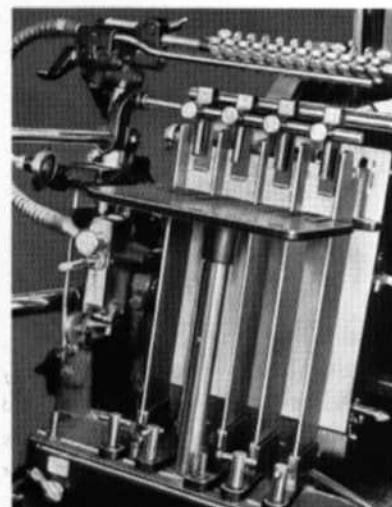
1 $\frac{1}{2}$ "

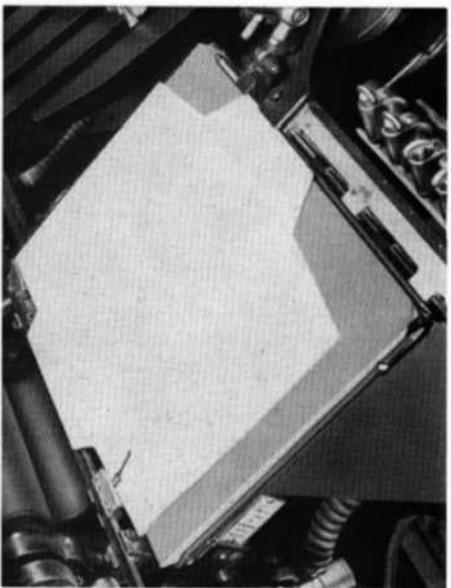
13×18

2 $\frac{3}{4}$ " to 4 $\frac{1}{3}$ " width

1 $\frac{1}{2}$ " to 2 $\frac{3}{4}$ " width

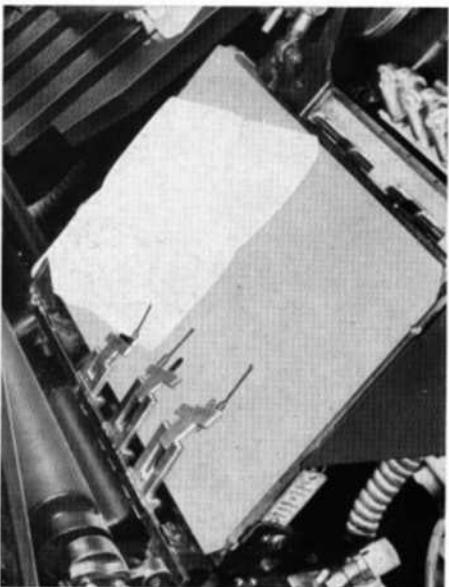
4"





Group 38A

**Device for printing open cut-out envelopes and other angled stocks with guides.** (In order to determine which guides are necessary for a given job, please submit sample sheets.)

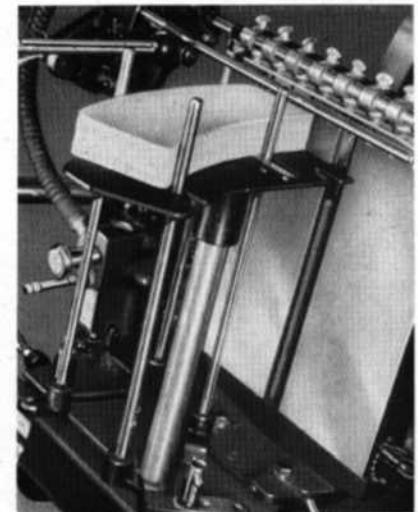


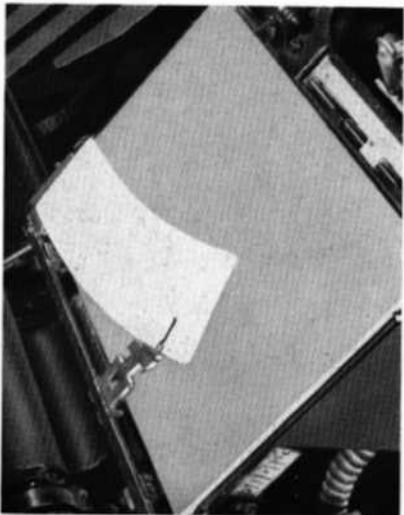
Group 38B

**Device for printing sheets that have been die-cut at sharper angles.** This is the same as Group 38A, however special grippers and special register guides are required.

Group 44

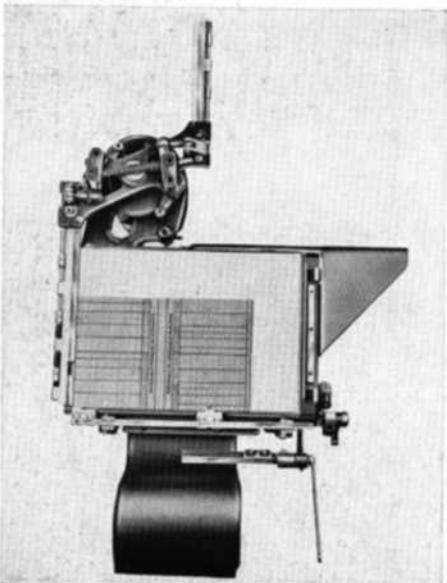
**Device for printing slightly curved sheets without register guides**





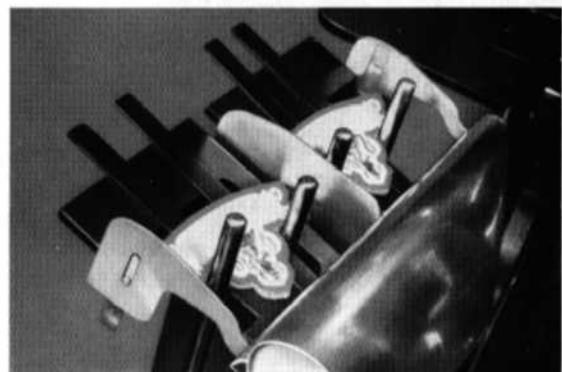
Group 49A

**Device for printing slightly curved sheets with register guides.** For printing sharply curved sheets with guides, order Group 49B and submit stock samples as special grippers and special register guides are necessary.



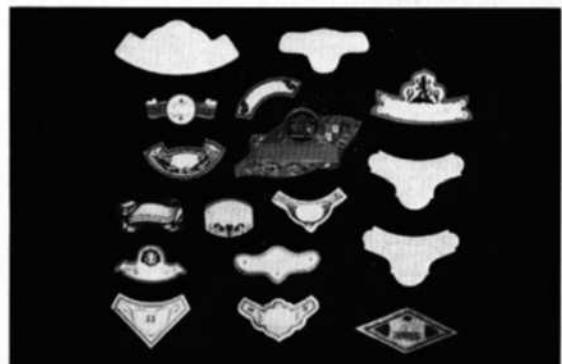
T 0272/73

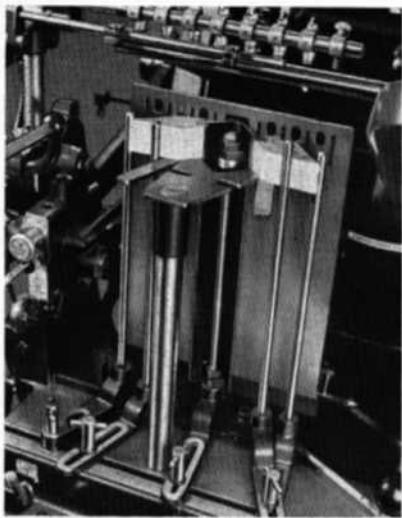
**Bottom register guides for printing without paper margin.** These are often used when printing book-keeping forms, file cards, etc., where type matter or rules must be printed right up to the edge of sheet. Available for 10x15 Original Heidelberg only.



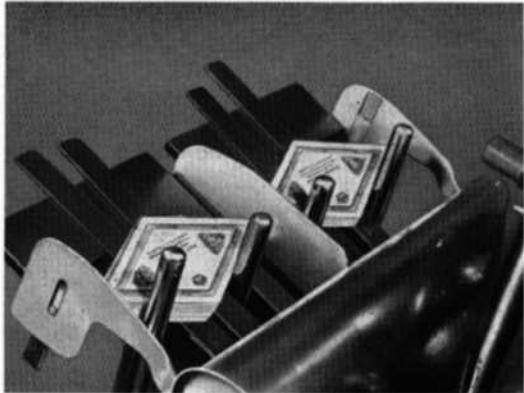
Group 41A

**Device for printing odd shaped labels two-up.** Available only for 10x15 Original Heidelberg.

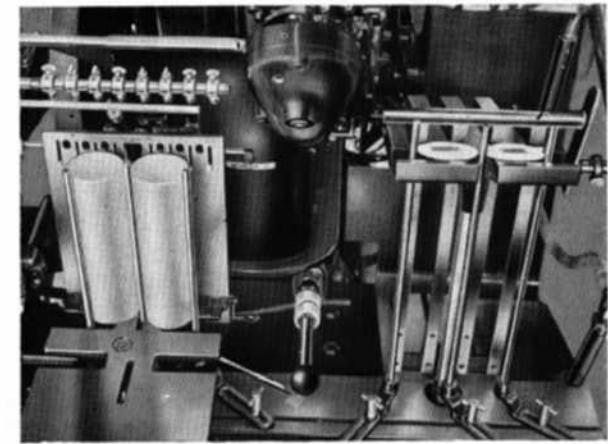


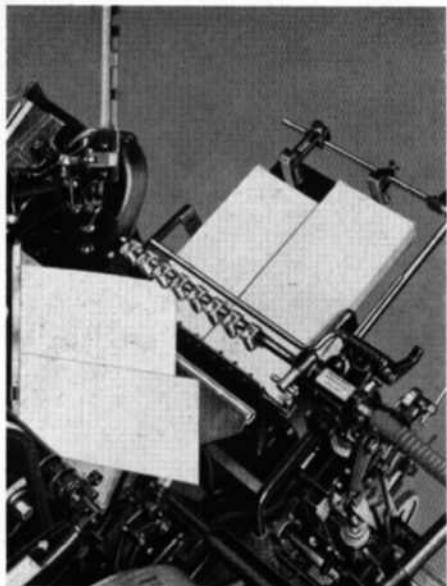


**Group 41 B**  
**Device for feeding labels cut at oblique angles.** This is supplementary to Group 41 A. Available only for 10x15 Original Heidelberg.

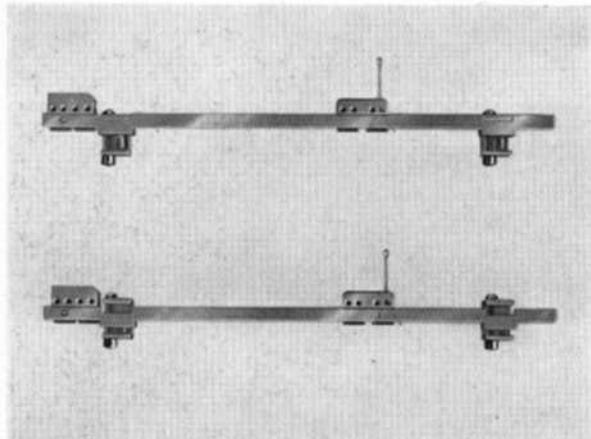


**Group 50**  
**Device for printing circular and oval disks** with diameters of  $1\frac{1}{2}$  to  $4\frac{3}{4}$  inches.  
Designed for two-up feeding.

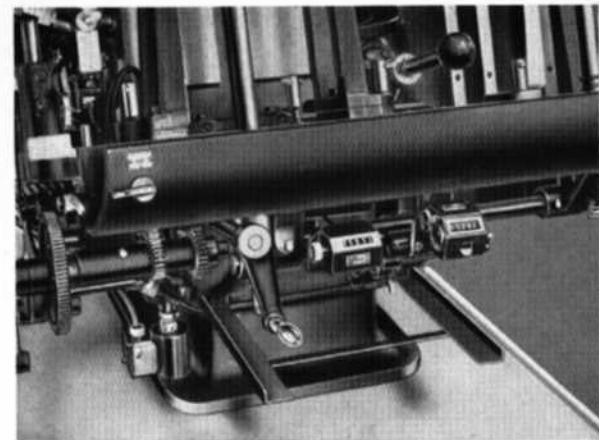




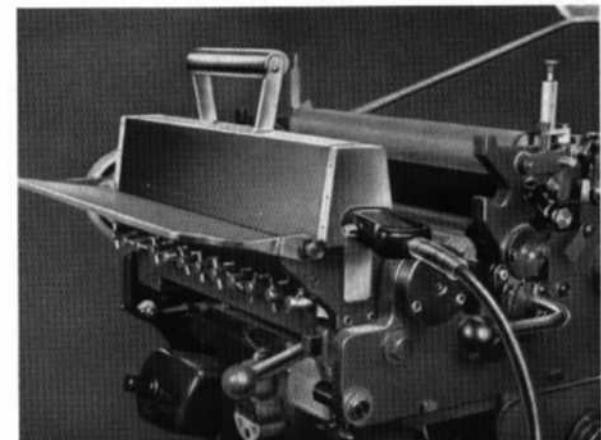
Group 52  
**Adjustable Sheet Steadier** to handle sheets of unequal lengths when printing two-up.



Group 46  
**Device for increasing range of adjustment of the bottom guides** when die-cutting, or when a larger paper margin is required for full utilization of a form.



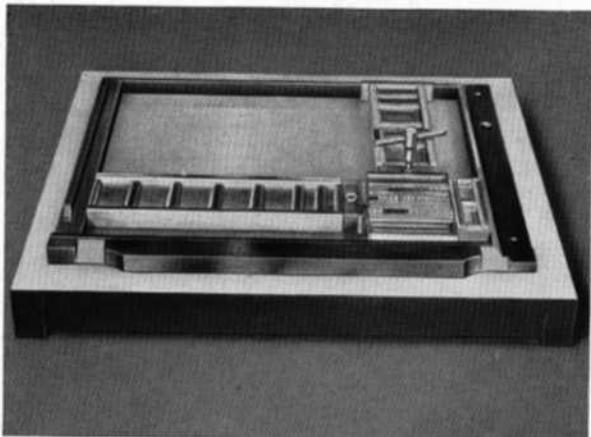
Group 74  
**Pre-Determined Sheet Counter.** This electric counter is set to the number of sheets required. When the number is reached, the press is automatically stopped. (When ordering, please state type of current and voltage.)



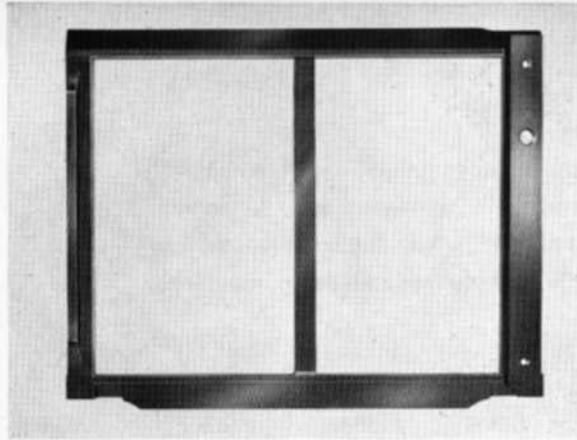
Group 72  
**Electric Heating Device for Ink Fountain.** Used primarily for carbon ink printing.



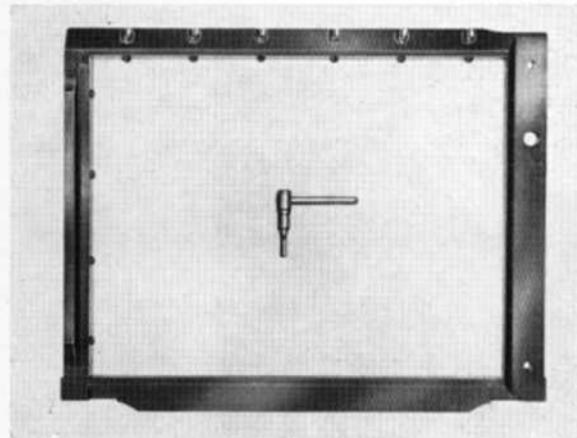
Group 55  
Steel Die-Cutting Plate



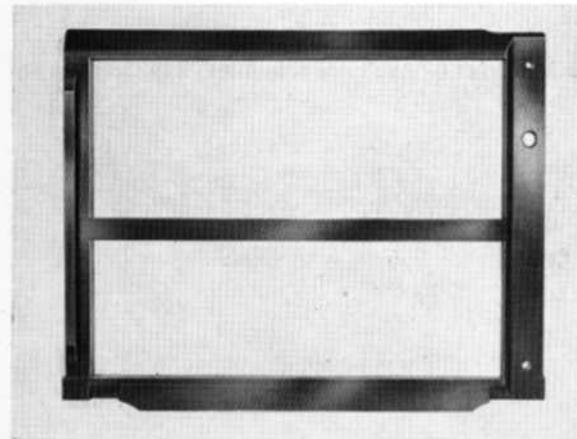
Group 65 Imposing Surface — For Lock up



T 5301  
Chase with Vertical  
Center Bar



T 5303  
Chase fitted with  
locking-screws. Used  
whenever it is impos-  
sible to insert a quoin  
within the chase.



T 5306  
Chase with horizontal  
Center Bar.

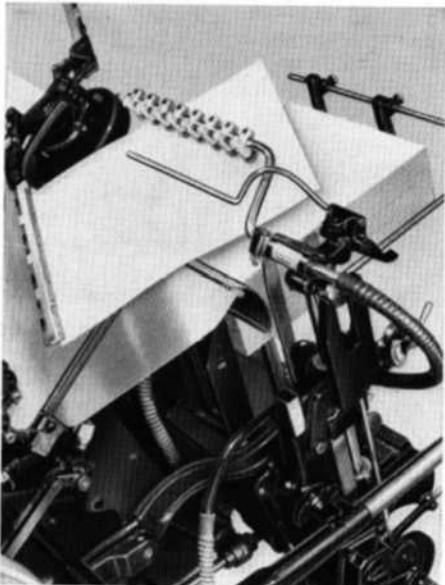
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**SCHNELLPRESSENFABRIK AG**  
**HEIDELBERG**



### Group 86

**Device for Feeding Rigid Material** — Available only for 13 x 18 Original Heidelberg.